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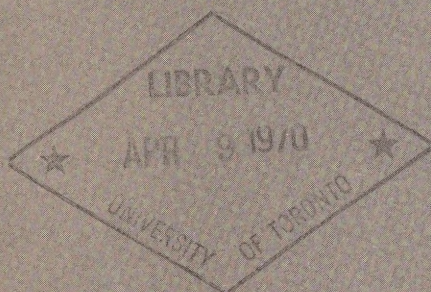


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DEPARTMENT OF ENERGY, MINES AND RESOURCES

Ottawa



OPERATION TANQUARY  
ELLESMERE ISLAND, N.W.T.  
1963 - 1966

No. 13

1969 Data Record Series

*Canada*  
**Canadian Oceanographic Data Centre**

Programmed by the  
Canadian Committee on Oceanography

1969

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DEFENCE RESEARCH BOARD OF CANADA

OPERATION TANQUARY

ELLESMERE ISLAND, N.W.T.

1963 - 1966

Periods of Survey:	26 May - 18 July, 1963
	8 May - 25 August, 1964
	11 May - 2 June, 1965
	1 May - 18 July, 1966

Principal Observers:	G. Hattersley-Smith
	J.E. Keys
	H. Serson

GEOPHYSICS SECTION

DEFENCE RESEARCH ESTABLISHMENT OTTAWA

Ottawa 4, Ontario



## SECTION I

Description of data collection procedures





Plate I

Motor toboggans and sled trains off north coast of Ellesmere Island.





Plate II

Oceanographic camp in fiord off north coast of Ellesmere Island.





Plate III

Gasoline-powered ice auger used for drilling 20-cm diameter hole.





Plate IV

Oceanographic winch with bathythermograph.





Plate V

Drawing off water samples from Knudsen bottle.





Plate VI

Seven-metre freight canoe fitted with oceanographic winch at Tanquary Fiord.  
Note the typical summer ice conditions in the fiord.

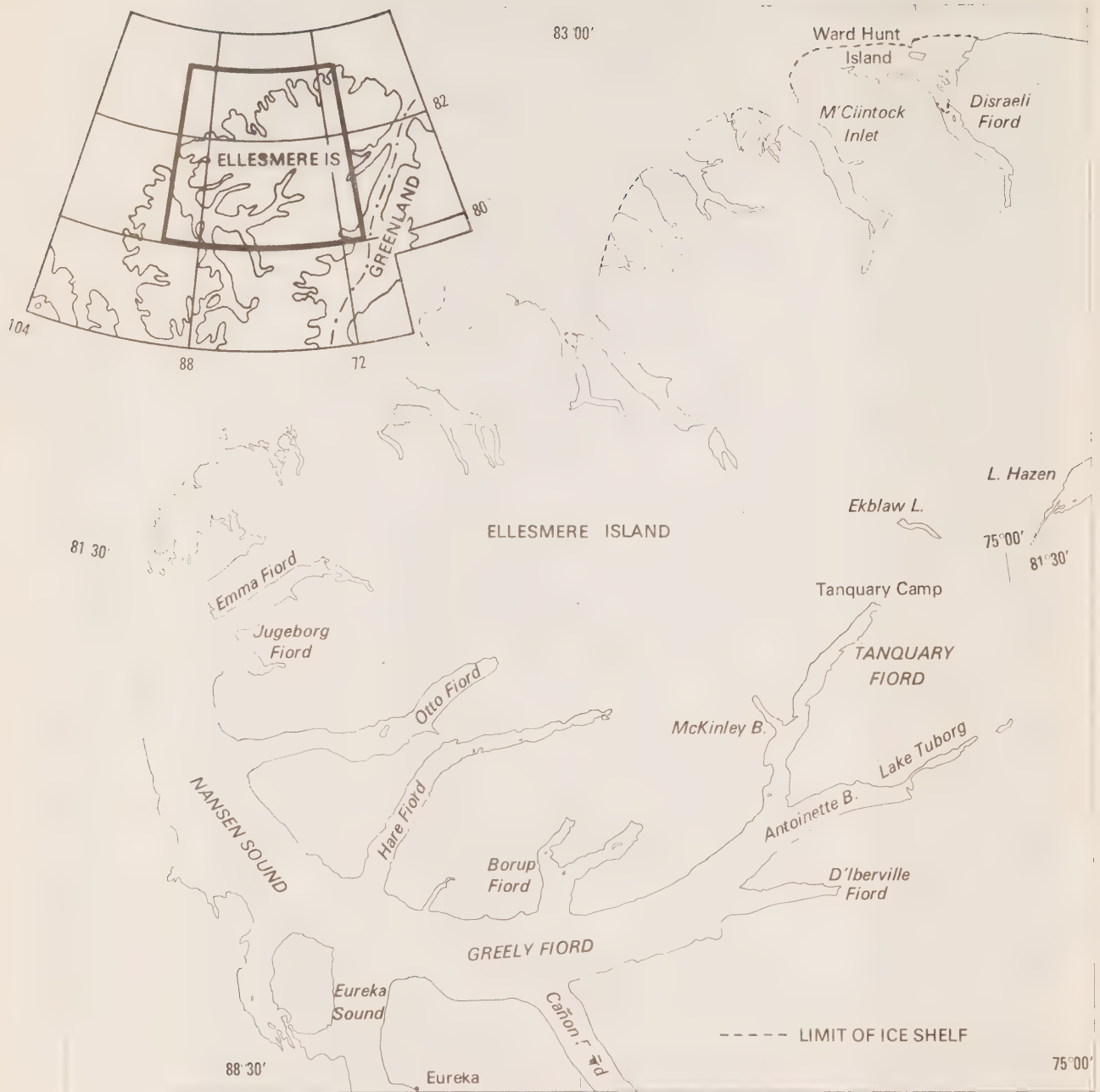


Fig. 1

## INTRODUCTION

During the seasons of 1963, 1964, 1965 and 1966, a total of 115 oceanographic stations were occupied in the Nansen Sound-Greely Fiord area and off the north coast of Ellesmere Island (Fig. 1). The work was part of a scientific program that included studies in glaciology (including sea-ice physics), radiochemistry, meteorology, geology, and marine biology. References to work peripheral to physical oceanography in these fields are included at the end of this report. The program was supported by the Defence Research Board, both directly and through contracts with the departments of Meteorology and Physics of McGill University, scientists and assistants of which participated in operations of all four seasons.

Operations were undertaken from Tanquary Camp, established by the Defence Research Board in August 1962 at the head of Tanquary Fiord (lat.  $81^{\circ}25'$ , long.  $76^{\circ}55'$ ). Because the short navigation season severely limits measurements on shipboard, it had been decided that an oceanographic program could be based primarily on work by field parties travelling over the ice from mid-April until mid-June.

## LOGISTICS

The program depended on light aircraft support for flying parties to field areas and for laying caches. In 1963, the oceanographic party consisted of three men with a dog sled and a motor toboggan and, in 1964, of four men with the same means of transport. In 1965 and 1966, it was found more efficient to have oceanographic parties of two men, with two motor toboggans, and to discontinue the use of a dog sled. Each motor toboggan was used to pull two or three sleds (Plate I), and it was found that with a load of 1400 lbs the toboggan could average 6-10 m.p.h. according to ice conditions. The load was divided about equally between oceanographic equipment; camping equipment and food; and fuel. The supplies carried gave field parties a range of about 600 km, although it was usually not necessary to travel more than 150 km between caches. Distances of 30 to 150 km/day were travelled, and usually one oceanographic station was occupied each day (Plate II). The time on station varied from 4 to 6 hours, according to the depth of water; the remaining 18 to 20 hours were required for travelling, making and breaking camp, cooking and sleeping.

In the first or second week of June open leads appeared in the fiords and the ice became flooded; work was then confined to the vicinity of the base camp. A 7-m freight canoe was used to take oceanographic stations in the upper part of Tanquary Fiord whenever ice conditions permitted movement in the leads. Occasionally the upper part of the fiord was blown clear of ice for several days at a time, and it was then possible to take stations as far as 25 km down the fiord.

## OBSERVATIONAL PROCEDURES

The oceanographic equipment has been described by Hattersley-Smith and Serson (1966). At each station a 20 cm hole was drilled in the ice with a gasoline-powered ice auger (Plate III); the ice varied in thickness from 1 to 3 m. A hand-winch and stand were set up over the hole and a sounding was taken, followed by one or two bathythermograph casts (Plate IV). Water samples and temperatures were then taken at standard depths with Knudsen bottles, each fitted with two protected reversing thermometers and lowered in pairs (Plate V). Water samples were collected in standard Copenhagen bottles which were rinsed three times before being filled. It was found that if the bottles were filled only to the shoulder, none was broken through freezing.

Depths were measured by means of a metering sheave checked by markers on the wire at 10 or 20 m intervals. There was rarely as much as 1 m difference between meter and markers. The occasional discrepancy could usually be traced to sea-water freezing in the sheave thereby increasing its effective diameter, but this problem was overcome by setting up a pyramid tent over the winch when the weather was cold, and by using a small camp stove to maintain the inside temperature above freezing.

Stations on the ice were located by theodolite bearings to shore features. With the available maps, it was found that 8 to 10 bearings on prominent peaks, capes or river channels gave positions accurate to 750 m or less. In oceanographic work from the canoe, the winch and stand were mounted on the thwarts and gunwhale (Plate VI). The usual station routine was followed and positions were established by sightings on shore.

#### THE DATA

The oceanographic data were tabulated separately for each of the four seasons and appear in that form in this record. Data from the density-stratified Lake Tuborg (Hattersley-Smith and Serson, 1964) are included. A preliminary account of the oceanography of the Nansen Sound fiord system (Ford and Hattersley-Smith, 1965) is based on the 1963 and 1964 data, and on data obtained from the CCGS "John A. Macdonald" in 1962. Brief logs for the four seasons follow.

G. Hattersley-Smith  
J.E. Keys  
H. Serson

D.R.E.O.

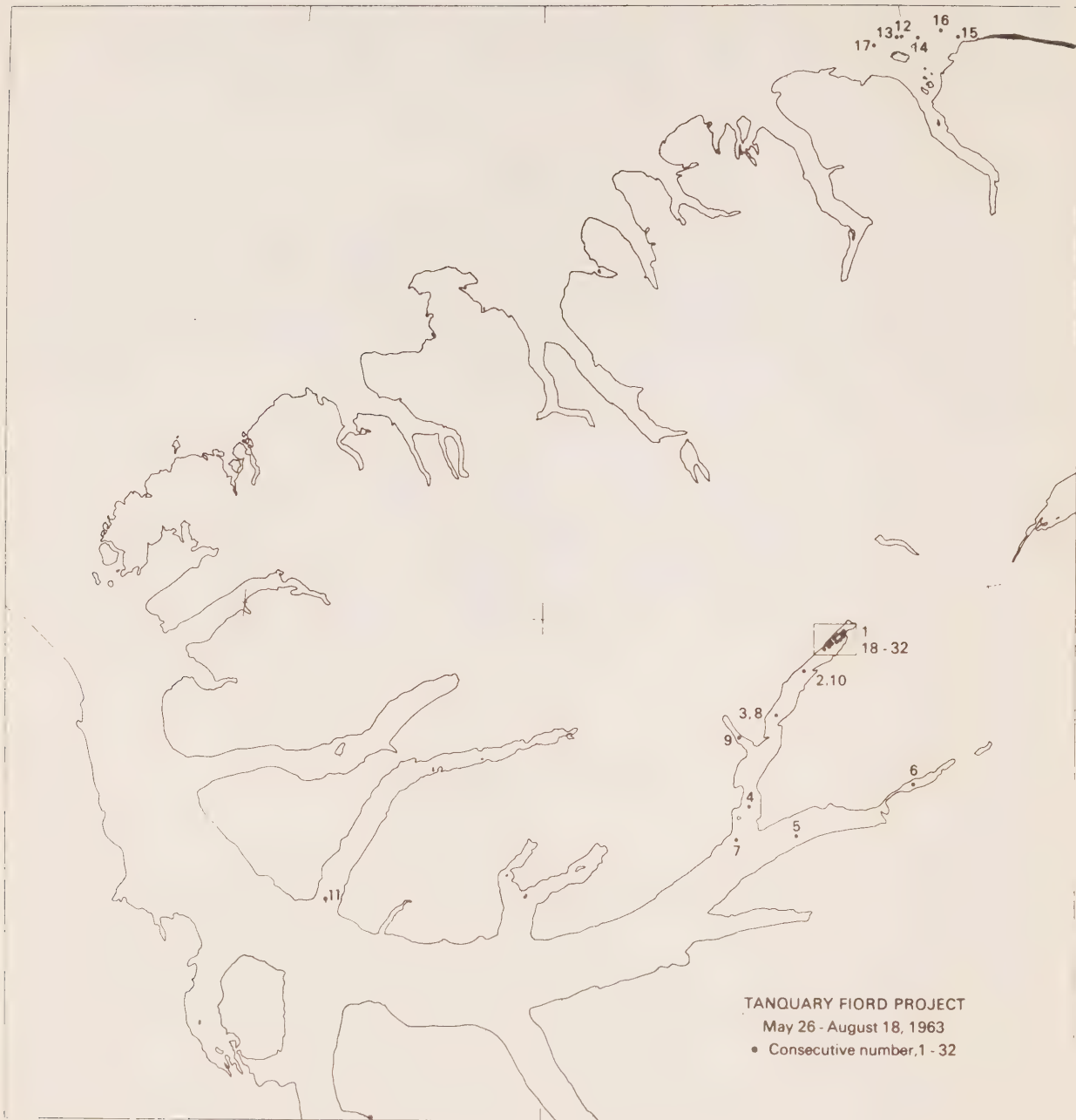


Fig. 2

1963 LOG

On 26 May a party consisting of G. Hattersley-Smith, H. Serson and J.S.J. Haight left Tanquary Camp with a dog sled and one motor toboggan on the first oceanographic traverse of the series. They occupied stations in Tanquary and Greely fiords, McKinley and Antoinette bays, and Lake Tuborg, returning on 9 June to Tanquary Camp. On 12 June an oceanographic party (Haight and U. Embacher) accompanied a supply flight to Hare Fiord and occupied a station in the mouth of the fiord. On 13 June, Serson and Haight were flown to Ward Hunt Island; they returned to Tanquary Camp on 24 June after occupying six oceanographic stations off the Ward Hunt Ice Shelf. They used the John Deere tractor found at the abandoned Ward Hunt Camp. From late June until 18 August work by B.W. Frost and Haight was confined to the vicinity of Tanquary Camp. All oceanographic stations (Fig. 2) are listed below; a more detailed report on the work is contained in Hattersley-Smith and others (1964).

<u>Date</u>	<u>Consecutive Station No.</u>	<u>Location</u>
26 May	001	Head of Tanquary Fiord
28 May	002	Upper end of Tanquary Fiord
30 May	003	Halfway up Tanquary Fiord
1 June	004	Mouth of Tanquary Fiord
1 June	005	Antoinette Bay
3 June	006	Lake Tuborg
6 June	007	Greely Fiord off mouth of Tanquary Fiord
6 June	008	Same as 003
8 June	009	McKinley Bay
9 June	010	Same as 002
13 June	011	Mouth of Hare Fiord
15 June	012	Off Ward Hunt Island
16 June	013	Off Ward Hunt Island
17 June	014	Off Ward Hunt Island
17 June	015	Off Ward Hunt Island
18 June	016	Off Ward Hunt Island
18 June	017	Off Ward Hunt Island
27 June	018	
29 June	019	
30 June	020	
7 July	021	
9 July	022	
10 July	023	
11 July	024	Stations 018 to 032 were taken near the head of Tanquary Fiord.
11 July	025	
13 July	026	
14 July	027	
15 July	028	
16 July	029	
16 July	030	
18 August	031	
18 August	032	

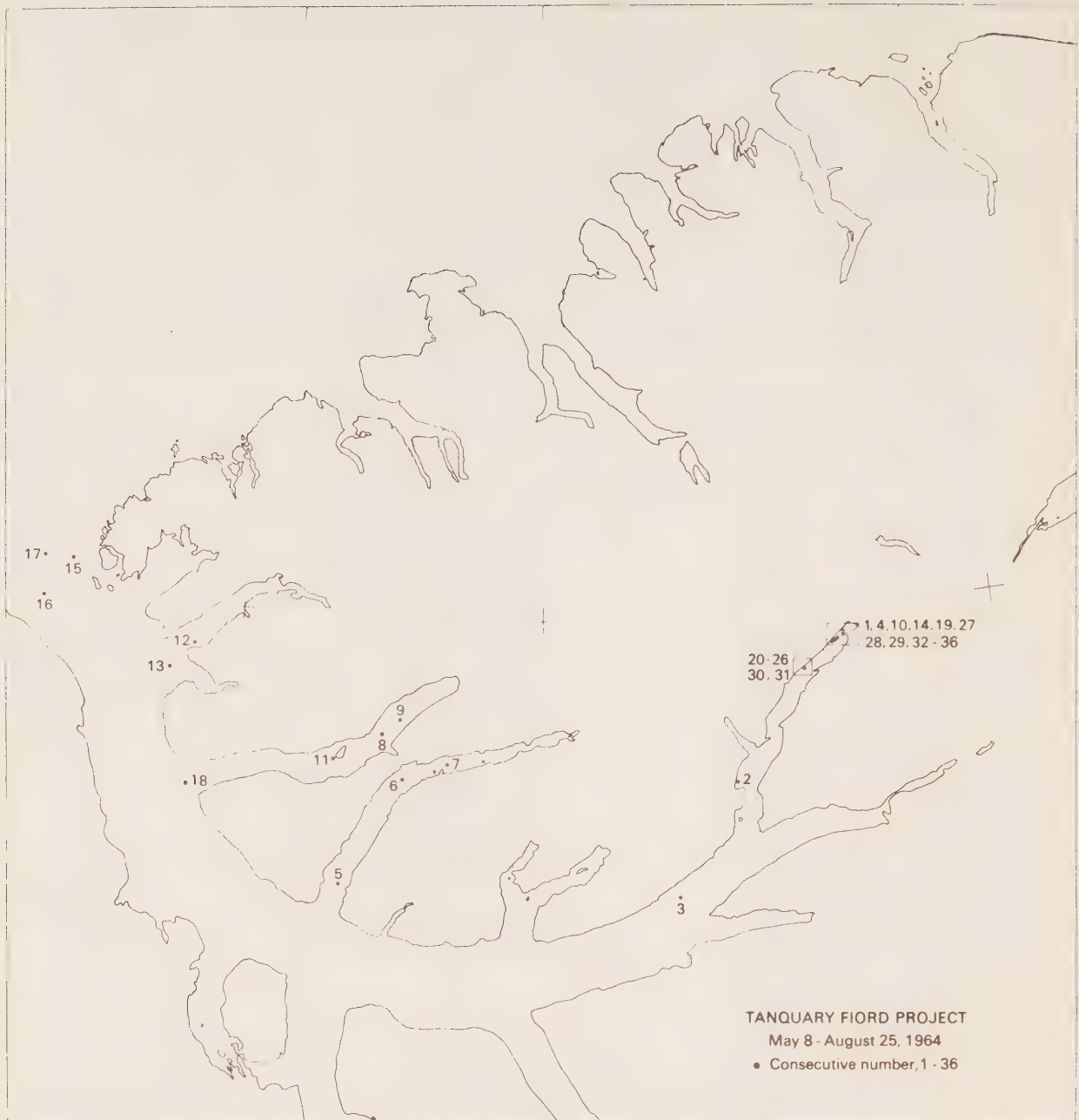


Fig. 3

1964 LOG

On 11 May a party consisting of G. Hattersley-Smith and U. Embacher, travelling by dog sled, and H. Serson and G.H. Seibert, driving two motor toboggans, left Tanquary Camp on an oceanographic traverse. Stations were occupied in Tanquary, Greely, Hare, Otto, Jugeborg and Emma fiords, and at the mouth of Nansen Sound. By early June the party had worked its way back to the mouth of Otto Fiord, when the onset of melt conditions prevented further travel. The party was evacuated by air to Tanquary Camp on 20 June. In the latter part of the season a number of stations were occupied in the upper part of Tanquary Fiord by canoe from the camp. All oceanographic stations (Fig.3) are listed below; a more detailed report on the work is given in Hattersley-Smith (Ed.) (1967).

<u>Date</u>	<u>Consecutive Station No.</u>	<u>Location</u>
8 May	001	Head of Tanquary Fiord
12 May	002	Near mouth of Tanquary Fiord
14 May	003	Near head of Greely Fiord
15 May	004	Head of Tanquary Fiord
19 May	005	Mouth of Hare Fiord
21 May	006	Halfway up Hare Fiord
21 May	007	Upper part of Hare Fiord
22 May	008	Halfway up Otto Fiord
23 May	009	Upper part of Otto Fiord
24 May	010	Head of Tanquary Fiord
24 May	011	Lower part of Otto Fiord
29 May	012	Mouth of Emma Fiord
30 May	013	Nansen Sound off Jugeborg Fiord
31 May	014	Head of Tanquary Fiord
2 June	015	Mouth of Nansen Sound
2 June	016	Mouth of Nansen Sound
3 June	017	Mouth of Nansen Sound
7 June	018	Mouth of Otto Fiord
7 June	019	
15 June	020	
22 June	021	
29 June	022	
29 June	023	
30 June	024	
30 June	025	Stations 019 to 036 were taken near the head of Tanquary Fiord.
3 July	026	
3 July	027	
3 July	028	
4 July	029	
6 July	030	
22 July	031	
29 July	032	
5 August	033	
5 August	034	
18 August	035	
25 August	036	



Fig. 4

1965 LOG

On 11 May two parties left Tanquary Camp on oceanographic traverses. Party A consisted of H. Serson and A. Haller, and party B of J.E. Keys and G.H. Seibert; there were two motor toboggans with each party. Stations occupied by the two parties in Tanquary, Greely, D'Iberville, Hare and Otto fiords, and in Antoinette Bay and Lake Tuborg (Fig. 4) are listed below.

<u>Date</u>	<u>Party</u>	<u>Consecutive Station No.</u>	<u>Location</u>
11 May	A & B	001	Near head of Tanquary Fiord
11 May	B	002	Near head of Tanquary Fiord
12 May	A	003	Near head of Tanquary Fiord
12 May	B	004	Halfway down Tanquary Fiord
13 May	A	005	Near mouth of Tanquary Fiord
13 May	B	006	Halfway down Tanquary Fiord
13 May	B	007	Halfway down Tanquary Fiord
14 May	A	008	Greely Fiord near mouth of Tanquary Fiord
15 May	A	009	Greely Fiord between Tanquary and Cañon fiords
15 May	B	010	Greely Fiord off mouth of Cañon Fiord
17 May	A	011	Mouth of Hare Fiord
19 May	B	012	Near head of Otto Fiord
19 May	A	013	Upper part of Hare Fiord
19 May	A	014	Head of Hare Fiord
20 May	B	015	Halfway down Otto Fiord
21 May	A	016	Halfway down Hare Fiord
21 May	B	017	Near head of Otto Fiord
25 May	B	018	Head of D'Iberville Fiord
25 May	B	019	Mouth of D'Iberville Fiord
27 May	A	020	Antoinette Bay
27 May	A	021	Antoinette Bay
2 June	Keys & Haller	022	Lake Tuborg

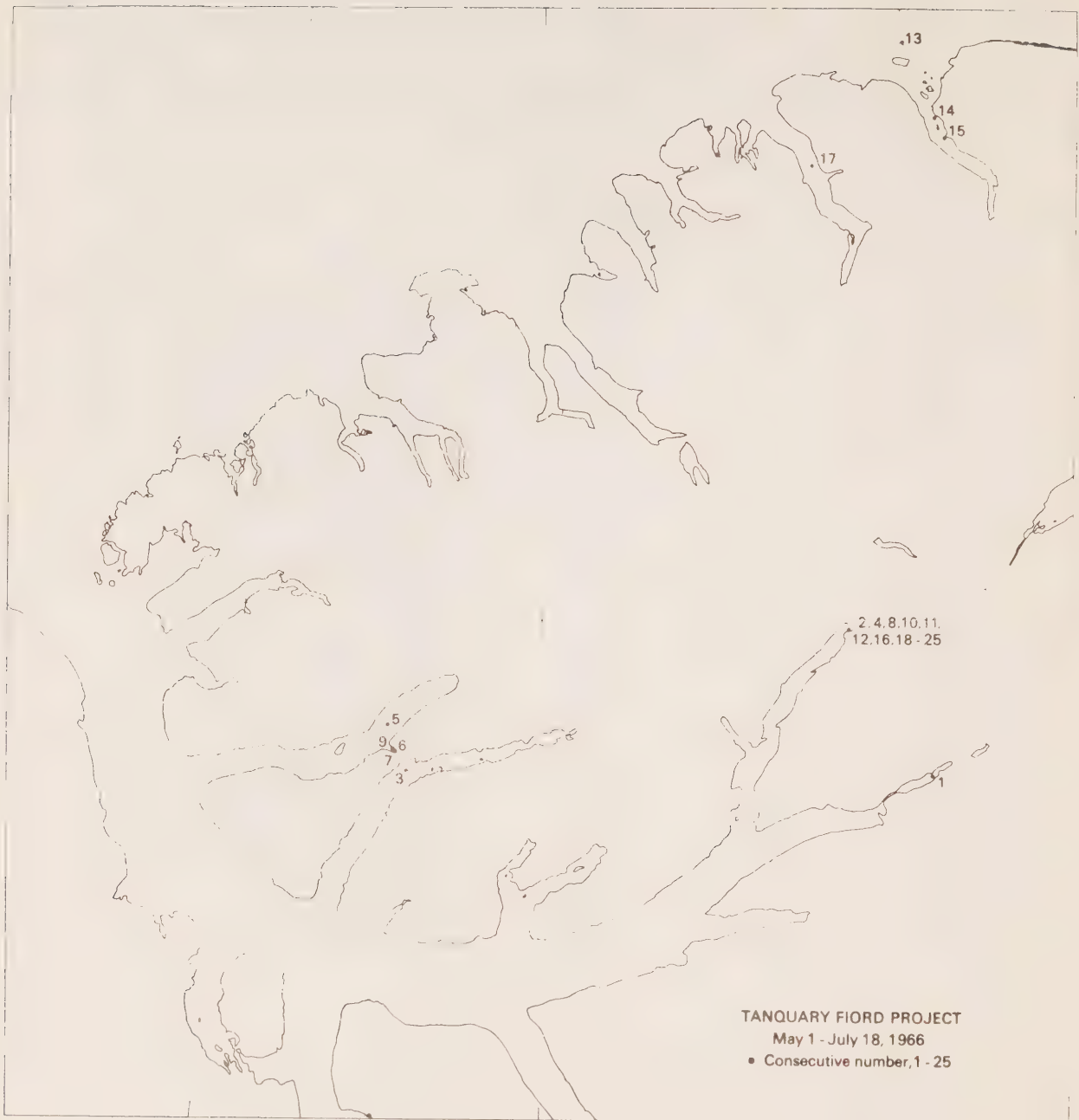


Fig. 5

1966 LOG

On 1 May, G. Hattersley-Smith and H. Serson occupied a station on Lake Tuborg; they made the return journey from Tanquary Camp with two motor toboggans. From mid-May oceanographic work was carried out by two parties: party A consisted of H. Serson and J. Robinson who operated over the fiords with two motor toboggans, and party B consisted of G.H. Seibert and M.A. Curtis (or, late in the season, J. Robinson), who occupied a regular series of stations near Tanquary Camp until 18 July. On 16 May, Serson and Robinson left Eureka for Hare and Otto fiords where they occupied six stations, returning to Tanquary Camp on 6 June. Serson and Robinson were flown to Ward Hunt Island on 12 June; they occupied four stations in Disraeli Fiord, M'Clintock Inlet and off Ward Hunt Island, before returning to Tanquary Camp on 8 July. All oceanographic stations (Fig. 5) are listed below.

<u>Date</u>	<u>Party</u>	<u>Consecutive Station No.</u>	<u>Location</u>
1 May	A	001	Lake Tuborg
19 May	B	002	Tanquary Camp
21 May	A	003	Hare Fiord
22 May	B	004	Tanquary Camp
23 May	A	005	Otto Fiord
25 May	A	006	Otto Fiord
25 May	A	007	Otto Fiord
25 May	B	008	Tanquary Camp
25 May	A	009	Otto Fiord
29 May	A	010	Hare Fiord
1 June	B	011	Tanquary Camp
7 June	B	012	Tanquary Camp
11 June	A	013	Ward Hunt Island
12 June	A	014	Disraeli Fiord
13 June	A	015	Disraeli Fiord
14 June	B	016	Tanquary Camp
19 June	A	017	M'Clintock Inlet
21 June	B	018	
28 June	B	019	
5 July	B	020	Stations 018 to 025 were taken near the head of Tanquary Fiord.
12 July	B	021	
16 July	B	022	
18 July	B	023	
18 July	B	024	
18 July	B	025	



## SECTION II

Description of the machine-generated data record



## INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an **"estimate of precision"** for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** ( $\sigma$ ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under **"GENERAL INFORMATION"** in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e.,  $1\sigma = A$ ,  $2\sigma = B$ , etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an **"interpolation error estimate"** derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T, S,  $O_2$ ) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the **"measurement error estimate"** comprises the **"combined measurement and interpolation error estimate"**. It is expressed as a multiple of the standard deviation of measurement ( $\sigma$ ) under normal routine field conditions by:

## CANADIAN OCEANOGRAPHIC DATA SHEET

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WATER		WAVES I		WAVES II		WIND		WET BULB		W.W. CODE		UNASSIGNED	
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20		e		e		e		e		e		e		e		e		e		3	

\* COLUMN 1 24 AS ON MASTER

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left( \frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

$\sigma$  = Standard deviation of the combined error estimates at standard oceanographic depth,  
 $\Delta V_i$  = the interpolation error estimate of variable "V" at standard oceanographic depth =  $\frac{1}{2} (\bar{V}_{i_1} - V_{i_2})$   
 $\gamma$  = Interpolation polynomial coefficient.

$Z_j$  = Observed depth.

$Z_i$  = Standard oceanographic depth, such that:  $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction  $\frac{a}{a}$ , if  $a \geq 2$ , is reported in this Data Record following the interpolated variable. It represents the **combined measurement and interpolation error estimate**. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the **interpolation error estimate** is given only when  $a \geq 2$  (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.

## EXPLANATION OF DATA RECORD HEADINGS

## MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) ww-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).  
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY / INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).  
00 m - 50 m = 00  
51 m - 150 m = 01  
151 m - 250 m = 02  
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;
- NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.
- (16) WAVES 1  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE (WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED (WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

## OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) $PO_4$	(9) -P-	(10) $NO_2$	(11) $NO_3$	(12) $SiO_2$
					(13) pH.

**NOTE:** Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by:  $S = 0.03 + 1.805 C1\%$ , reported in:  
 a. 1/100 parts per 1000, or  
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places. An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by:  $(\text{Specific gravity} - 1) \times 10^3$  (e.g.,  $\sigma_t$  reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO <sub>4</sub>	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO <sub>2</sub>	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre – No dissolved nitrogen included –
(11) NO <sub>3</sub>	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO <sub>4</sub>	Silicate-Silicon reported in whole microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

#### INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

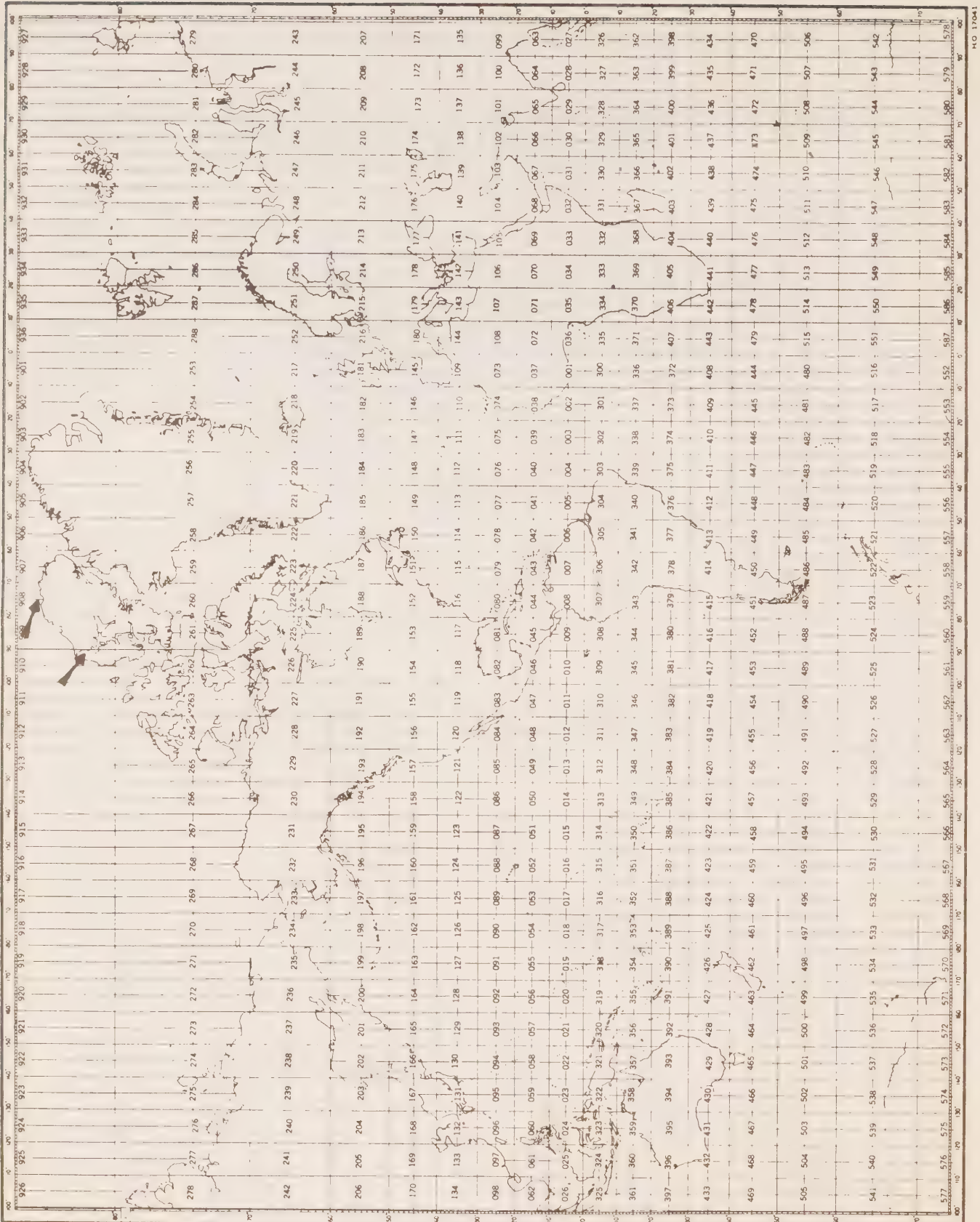
- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY: **A.** The reported salinity values are measured to three decimal places.  
 (i) the interpolation error estimate is less than twice the standard deviation of measurement  
 –the interpolated value is reported to three decimal places (e.g., 30.139).  
 (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.  
 –the interpolated value is reported to two decimal places, and followed by the **interpolation error estimate** (e.g., 29.23 C).  
**B.** The reported salinity values are measured to two decimal places and followed by the measurement error estimate.  
 –the interpolated value is reported to two decimal places, and followed by the **combined measurement and interpolation error estimate** (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the **combined measurement and interpolation error estimate** (see "Introduction" to section II of the data record).

- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^P \delta dp$$
- $\Delta D$  is expressed in dynamic metres ( $10^5$  ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly  $\chi$  as defined by:
- $$\chi = 1/g \int_0^P p \delta dp = \int_0^Z \rho p \delta dz$$
- $\chi$  is expressed in units of  $10^8$  ergs/cm<sup>2</sup> and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- $\delta$  is expressed in ml/gr, and conventionally reported as  $10^5 \delta$ , to one decimal place (i.e.,  $\delta$  reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

## SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

\* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.



MARSDEN SQUARE CHART

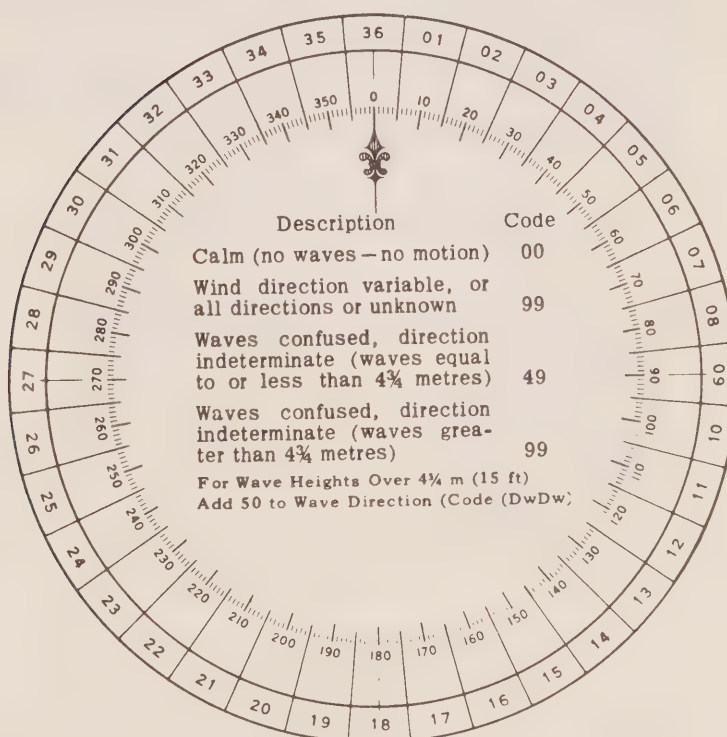
**Table 1**  
**CONVERSION**  
**MINUTES TO  $\frac{1}{10}$  HRS.**

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

**Table 2**  
**WATER COLOR CODE**  
**Based on Percentage Yellow**

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

**Table 3. DIRECTION CODE (dd)**



**NOTE:**

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.

**Table 4. PERIOD OF THE WAVES ( $P_w$ )**  
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

**Table 5. HEIGHT OF THE WAVES ( $H_w$ )**

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 =  $\frac{1}{4}$  m (1 ft) to  $\frac{3}{4}$  m ( $2\frac{1}{2}$  ft); 5 =  $2\frac{1}{4}$  m (7 ft) to  $2\frac{3}{4}$  m (9 ft); 9 =  $4\frac{1}{4}$  m ( $13\frac{1}{2}$  ft) to  $4\frac{3}{4}$  m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of  $2\frac{3}{4}$  m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)	Add 50 to Dw Dw	0 5 m (16 ft)
1	½ m ( 1½ ft)		1 5½ m (17½ ft)
2	1 m ( 3 ft)		2 6 m (19 ft)
3	1½ m ( 5 ft)		3 6½ m (21 ft)
4	2 m ( 6½ ft)		4 7 m (22½ ft)
5	2½ m ( 8 ft)		5 7½ m (24 ft)
6	3 m ( 9½ ft)		6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

**Table 6. WIND FORCE CODE**

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww		
No meteors except photometeors	00	Cloud development not observed or not observable
	01	Clouds generally dissolving or becoming less developed
	02	State of sky on the whole unchanged
	03	Clouds generally forming or developing
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes
	05	Haze
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour
	10	Mist
	11	{ Patches of } shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	
	13	Lightning visible, no thunder heard
	14	Precipitation within sight, not reaching the ground or the surface of the sea
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station
	17	Thunderstorm, but no precepitation at the time of observation
	18	Squalls
	19	Funnel clouds

characteristic change of the state of sky during the past hour	00	Cloud development not observed or not observable
	01	Clouds generally dissolving or becoming less developed
	02	State of sky on the whole unchanged
	03	Clouds generally forming or developing
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes
	05	Haze
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour
	10	Mist
	11	{ Patches of } shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	
	13	Lightning visible, no thunder heard
	14	Precipitation within sight, not reaching the ground or the surface of the sea
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station
	17	Thunderstorm, but no precepitation at the time of observation
	18	Squalls
	19	Funnel clouds

ww = 20 - 29	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation		
not falling as shower(s)	20	Drizzle (not freezing) or snow grains		
	21	Rain (not freezing)		
	22	Snow		
	23	Rain and snow or ice pellets, type (a)		
	24	Freezing drizzle or freezing rain		
	25	Shower(s) of rain		
	26	Shower(s) of snow, or of rain and snow		
	27	Shower(s) of hail, or of rain and hail		
	28	Fog or ice fog		
	29	Thunderstorm (with or without precipitation)		
	ww = 30 - 39	30	Duststorm, sandstorm, drifting or blowing snow	
		30	{ Slight or moderate duststorm or sandstorm }	- has decreased during the preceding hour
31		- no appreciable change during the preceding hour		
32		- has begun or has increased during the preceding hour		
		33	{ Severe duststorm or sandstorm }	- has decreased during the preceding hour
	34	- no appreciable change during the preceding hour		
	35	- has begun or has increased during the preceding hour		
		36	Slight or moderate blowing snow	{ generally low (below eye level)
37		Heavy drifting snow		
		38	Slight or moderate blowing snow	{ generally high (above eye level)
		39	Heavy blowing snow	

ww = 40 - 49	40	Fog or ice fog at the time of observation
	40	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer
	41	Fog or ice fog in patches
	42	Fog or ice fog, sky visible
	43	Fog or ice fog, sky invisible
	44	Fog or ice fog, sky visible
	45	Fog or ice fog, sky invisible
	46	Fog or ice fog, sky visible
	47	Fog or ice fog, sky invisible
	48	Fog, depositing rime, sky visible
	49	Fog, depositing rime, sky invisible

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

## PRECIPITATION ON STATION AT TIME OF OBSERVATION

## ww = 50 - 59 Drizzle

- |    |  |   |                                      |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent          | { | slight at time of observation        |
| 51 | Drizzle, not freezing, continuous            |   |                                      |
| 52 | Drizzle, not freezing, intermittent          | { | moderate at time of observation      |
| 53 | Drizzle, not freezing, continuous            |   |                                      |
| 54 | Drizzle, not freezing, intermittent          | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous            |   |                                      |
| 56 | Drizzle, freezing, slight                    |   |                                      |
| 57 | Drizzle, freezing, moderate or heavy (dense) |   |                                      |
| 58 | Drizzle and rain, slight                     |   |                                      |
| 59 | Drizzle and rain, moderate or heavy          |   |                                      |

## ww = 60 - 69 Rain

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent            | { | slight at time of observation   |
| 61 | Rain, not freezing, continuous              |   |                                 |
| 62 | Rain, not freezing, intermittent            | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous              |   |                                 |
| 64 | Rain, not freezing, intermittent            | { | heavy at time of observation    |
| 65 | Rain, not freezing, continuous              |   |                                 |
| 66 | Rain, freezing, slight                      |   |                                 |
| 67 | Rain, freezing, moderate or heavy           |   |                                 |
| 68 | Rain or drizzle and snow, slight            |   |                                 |
| 69 | Rain or drizzle and snow, moderate or heavy |   |                                 |

## 70 - 79 Solid precipitation not in showers

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| ww |   |   |                                 |
| 70 | Intermittent fall of snow flakes                      | { | slight at time of observation   |
| 71 | Continuous fall of snow flakes                        |   |                                 |
| 72 | Intermittent fall of snow flakes                      | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes                        |   |                                 |
| 74 | Intermittent fall of snow flakes                      | { | heavy at time of observation    |
| 75 | Continuous fall of snow flakes                        |   |                                 |
| 76 | Ice prisms (with or without fog)                      |   |                                 |
| 77 | Snow grains (with or without fog)                     |   |                                 |
| 78 | Isolated starlike snow crystals (with or without fog) |   |                                 |
| 79 | Ice pellets, type (a)                                 |   |                                 |

## ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- |    |  |   |   |
|----|--|---|---|
| 80 | Rain shower(s), slight   |   |   |
| 81 | Rain shower(s), moderate or heavy  |   |   |
| 82 | Rain shower(s), violent  |   |   |
| 83 | Shower(s) of rain and snow mixed, slight   |   |   |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy  |   |   |
| 85 | Snow shower(s), slight   |   |   |
| 86 | Snow shower(s), moderate or heavy  |   |   |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed  | { | - slight  |
| 88 |  |   |   |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder      | { | - moderate or heavy   |
| 90 |  |   |   |
| 91 | Slight rain at time of observation   | { | thunderstorm during the preceding hour but not at time of observation |
| 92 | Moderate or heavy rain at time of observation  |   |   |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation                               | { |   |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation                    |   |   |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation | { | thunderstorm at time of observation                                   |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation                               |   |   |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation              | { |   |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation                        |   |   |
| 99 | Thunderstorm, heavy, with hail at time of observation  |   |   |

## PRECIPITATION ON STATION AT TIME OF OBSERVATION

Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus . . . . . Ci	5	Nimbostratus . . . . . Ns
1	Cirrocumulus . . . . . Cc	6	Stratocumulus . . . . . Sc
2	Cirrostratus . . . . . Cs	7	Stratus . . . . . St
3	Alto cumulus . . . . . Ac	8	Cumulus . . . . . Cu
4	Altostratus . . . . . As	9	Cumulonimbus . . . . . Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta =  $\frac{1}{8}$  of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility	
0	Less than 50 metres	(less than 55 yards)
1	50-200 metres	(approx. 55-220 yards)
2	200-500 metres	(approx. 220-550 yards)
3	500-1,000 metres	(approx. 550 yards- $\frac{5}{8}$ n.m.)
4	1-2 km	(approx. $\frac{5}{8}$ -1 n.m.)
5	2-4 km	(approx. 1-2 n.m.)
6	4-10 km	(approx. 2-6 n.m.)
7	10-20 km	(approx. 6-12 n.m.)
8	20-50 km	(approx. 12-30 n.m.)
9	50 km or more	(30 n.m. or more)

Note: n.m. = nautical mile

### SECTION III

Serial oceanographic data



1963

GENERAL INFORMATION

<u>Observation platform:</u>	Land based survey party
<u>Total number of stations occupied:</u>	32
<u>Surface sea water temperature:</u>	Reversing thermometer



C-REF-NO 001	YR 1963	DEPTH 203	WAVES 1	XX	AIR T	VIS
CONS. NO 001	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 001
LAT 81-237N	DAY 26	NO.DPTH 1	WND-DIR		WW-CODE	
LON 77-100W	HR 22.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0006	-0162	30153		2427	14351
220	0009	-0168	30146		2426	14348
220	0018	-0167	30155		2427	14350
220	0027	-0097	30794		2477	14394
220	0046	-0078	31997		2574	14423
220	0091	-0102	33482		2695	14440
220	0183	-0042	34306		2759	14494

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C-REF-NO 001	YR 1963	DEPTH 59	WAVES 1	XX	AIR T	VIS
CONS. NO 002	MONTH 5	MXSAMPD 00	WAVES 2	XX	WET B	STN 002
LAT 81-181N	DAY 28	NO.DPTH 5	WND-DIR		WW-CODE	
LON 77-510W	HR 17.6	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
176	0006	-0166	30930		2490	14360
176	0009	-0155	30371		2444	14357
176	0018	-0164	31623		2546	14372
176	0027	-0101	31852		2563	14407
176	0046	-0089	32268		2596	14421

C-REF-NO 001	YR 1963	DEPTH 227	WAVES 1	XX	AIR T	VIS
CONS. NO 003	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 003
LAT 81-118N	DAY 30	NO.DPTH 7	WND-DIR		WW-CODE	
LON 78-310W	HR 00.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
002	0006	-0162	34844		2807	14417
002	0009	-0157	30218		2432	14354
002	0018	-0157	30079		2421	14354
002	0027	-0133	31340		2522	14384
002	0046	-0092	32114		2584	14418
002	0091	-0123	37554		3025	14487
002	0183	-0054	34803		2799	14496

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C-REF-NO 001	YR 1963	DEPTH 154	WAVES 1	XX	AIR T	VIS
CONS. NO 004	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 004
LAT 80-548N	DAY 01	NO.DPTH 7	WND-DIR		WW-CODE	
LON 79-070W	HR 04.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
040	0006	-0157	29863		2403	14349
040	0009	-0157	29863		2403	14349
040	0018	-0157	29873		2404	14351
040	0027	-0109	30824		2480	14389
040	0046	-0111	31980		2573	14407
040	0091	-0109	33558		2701	14437
040	0137	-0067	34062		2740	14472

C-REF-NO 001	YR 1963	DEPTH 238	WAVES 1	XX	AIR T	VIS
CONS. NO 005	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN 005
LAT 80-501N	DAY 01	NO.DPTH 8	WND-DIR		WW-CODE	
LON 78-140W	HR 21.1	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
211	0006	-0158	29783		2397	14347
211	0009	-0156	29774		2396	14349
211	0018	-0157	29777		2396	14350
211	0027	-0108	30851		2482	14389
211	0046	-0118	31938		2570	14403
211	0091	-0115	33494		2696	14434
211	0183	-0033	34406		2766	14500
211	0238	0004	34689		2787	14530

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C-REF-NO 001	YR 1963	DEPTH 60	WAVES 1	XX	AIR T	VIS
CONS. NO 006	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 006
LAT 80-567N	DAY 03	NO.DPTH 8	WND-DIR		WW-CODE	
LON 76-000W	HR 01.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
019	0003		00460			
019	0046		00460			
019	0049					
019	0053		05750			
019	0057		25639			
019	0057		25451			
019	0057		25652			
019	0057		25635			

C-REF-NO 001	YR 1963	DEPTH 128	WAVES 1	XX	AIR T	VIS
CONS. NO 007	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 057
LAT 80-496N	DAY 06	NO.DPTH 7	WND-DIR		WW-CODE	
LON 79-230W	HR 04.4	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
044	0006	-0157	29920		2408	14350
044	0009	-0157	29923		2408	14350
044	0018	-0128	30165		2427	14369
044	0027	-0108	30779		2476	14388
044	0046	-0118	31993		2575	14404
044	0091	-0108	33528		2698	14437
044	0128	-0073	33973		2733	14466

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C-REF-NO 001	YR 1963	DEPTH 227	WAVES 1	XX	AIR T	VIS
CONS. NO 008	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN 003
LAT 81-118N	DAY 06	NO.DPTH 7	WND-DIR		WW-CODE	
LON 78-310W	HR 10.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
109	0006	-0162	30029		2417	14349
109	0009	-0157	30034		2417	14352
109	0018	-0158	30085		2421	14354
109	0027	-0104	30888		2485	14392
109	0046	-0092	31861		2563	14414
109	0091	-0107	33516		2697	14438
109	0183	-0040	34316		2759	14495

C-REF-NO 001	YR 1963	DEPTH 73	WAVES 1	XX	AIR T	VIS
CONS. NO 009	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN 008
LAT 81-088N	DAY 08	NO.DPTH 5	WND-DIR		WW-CODE	
LON 79-140W	HR 01.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
015	0006	-0157	29976		2412	14350
015	0009	-0162	29976		2412	14349
015	0018	-0151	30037		2417	14356
015	0027	-0101	30826		2480	14392
015	0046	-0104	31905		2567	14409

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C-REF-NO 001	YR 1963	DEPTH 59	WAVES 1	XX	AIR T	VIS
CONS. NO 010	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN 002
LAT 81-181N	DAY 09	NO.DPTH 5	WND-DIR		WW-CODE	
LON 77-510W	HR 12.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
122	0006	-0163	30091		2422	14349
122	0009	-0160	30108		2423	14351
122	0018	-0160	30106		2423	14353
122	0027	-0099	30807		2478	14393
122	0046	-0097	32071		2580	14415

C-REF-NO 001	YR 1963	DEPTH 183	WAVES 1	XX	AIR T	VIS
CONS. NO 011	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN 009
LAT 80-41N	DAY 13	NO.DPTH 7	WND-DIR		WW-CODE	
LON 86-55W	HR 00.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 909	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0006		30160			
008	0009	-0163	30204		2431	14351
008	0018		30343			
008	0027		30703			
008	0046	-0136	31952		2572	14395
008	0091	-0154	33560		2702	14416
008	0183		34409			

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C-REF-NO 001	YR 1963	DEPTH 51	WAVES 1	XX	AIR T	VIS
CONS. NO 012	MONTH 6	MXSAMPL 00	WAVES 2	XX	WET B	STN 010
LAT 83-088N	DAY 15	NO.DPTH 5	WND-DIR		WW-CODE	
LON 74-040W	HR 21.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0006	-0150	30448		2450	14360
218	0009	-0152	30509		2455	14361
218	0018	-0157	30561		2460	14361
218	0027	-0156	30593		2462	14363
218	0046	-0164	30819		2481	14366

C-REF-NO 001	YR 1963	DEPTH 40	WAVES 1	XX	AIR T	VIS
CONS. NO 013	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN 011
LAT 83-088N	DAY 16	NO.DPTH 4	WND-DIR		WW-CODE	
LON 74-060W	HR 19.4	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0006	-0160	30420		2448	14355
194	0009	-0163	30520		2456	14356
194	0018	-0161	21641		1738	14235
194	0027	-0161				

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C-REF-NO 001	YR 1963	DEPTH 238	WAVES 1	XX	AIR T	VIS
CONS. NO 014	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN 012
LAT 83-077N	DAY 17	NO.DPTH 6	WND-DIR		WW-CODE	
LON 73-370W	HR 14.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
147	0009	-0160	30557		2459	14358
147	0018	-0159	30563		2460	14360
147	0046	-0158	30552		2459	14365
147	0091	-0124	33459		2693	14429
147	0183	-0159	34358		2767	14440
147	0238	-0025	34483		2772	14514

C-REF-NO 001	YR 1963	DEPTH 132	WAVES 1	XX	AIR T	VIS
CONS. NO 015	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 013
LAT 83-071N	DAY 17	NO.DPTH 7	WND-DIR		WW-CODE	
LON 72-380W	HR 19.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0006	-0161	30547		2459	14357
190	0009	-0162	30547		2459	14357
190	0018	-0161	30554		2459	14359
190	0027	-0164	30568		2460	14359
190	0046	-0161	30751		2475	14366
190	0091	-0121	33502		2697	14431
190	0128	-0088				

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C-REF-NO 001	YR 1963	DEPTH 53	WAVES 1	XX	AIR T	VIS
CONS. NO 016	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN 014
LAT 83-084N	DAY 18	NO.DPTH 5	WND-DIR		WW-CODE	
LON 73-590W	HR 15.6	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
156	0006	-0155	29920		2408	14351
156	0009		30261			
156	0018	-0157	30542		2458	14360
156	0027	-0162	30583		2461	14360
156	0046	-0163	30508		2455	14362

C-REF-NO 001	YR 1963	DEPTH 87	WAVES 1	XX	AIR T	VIS
CONS. NO 017	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN 015
LAT 83-079N	DAY 18	NO.DPTH 5	WND-DIR		WW-CODE	
LON 74-430W	HR 19.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0006	-0164	30753		2475	14358
193	0009	-0165	30518		2456	14355
193	0018	-0165	30561		2460	14357
193	0027	-0164	30585		2462	14359
193	0046	-0159	30786		2478	14367

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C-REF-NO 001	YR 1963	DEPTH 199	WAVES 1	XX	AIR T	VIS
CONS. NO 018	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN 016
LAT 81-255N	DAY 27	NO.DPTH 12	WND-DIR		WW-CODE	
LON 77-020W	HR 18.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	-0013	03710		0292	14066
189	0009	-0147	30159		2427	14358
189	0018	-0158	30194		2430	14355
189	0027	-0098	30895		2485	14395
189	0037	-0077	31463		2531	14414
189	0046	-0083	31980		2573	14420
189	0055	-0112	32482		2614	14415
189	0073	-0116	33219		2674	14426
189	0091	-0101	33566		2701	14441
189	0110	-0084	33870		2725	14457
189	0146	-0059	34130		2745	14478
189	0183	-0041	34305		2759	14495

C-REF-NO 001	YR 1963	DEPTH 122	WAVES 1	XX	AIR T	VIS
CONS. NO 019	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 017
LAT 81-260N	DAY 29	NO.DPTH 7	WND-DIR		WW-CODE	
LON 76-580W	HR 21.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMI	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
213	0000	-0006	03170		0248	14062
213	0009	-0134	30464		2451	14369
213	0018	-0153	30179		2429	14357
213	0027	-0098	30876		2484	14394
213	0046	-0087	31016		2495	14405
213	0091	-0099	33604		2704	14443
213	0119	-0075	33987		2734	14464

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C-REF-NO 001	YR 1963	DEPTH 84	WAVES 1	XX	AIR T	VIS
CONS. NO 020	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 018
LAT 81-240N	DAY 30	NO.DPTH 6	WND-DIR		WW-CODE	
LON 77-010W	HR 21.4	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0000	-0058	02030		0152	14022
214	0009	-0137	30076		2420	14362
214	0018	-0155	30191		2430	14356
214	0027	-0108	30813		2479	14389
214	0046	-0083	31713		2551	14416
214	0082	-0109	33389		2687	14434

C-REF-NO 001	YR 1963	DEPTH	55	WAVES 1	XX	AIR T	VIS
CONS. NO 021	MONTH 7	MXSAMPD	01	WAVES 2	XX	WET B	STN 019
LAT 81-232N	DAY 07	NO.DPTH	5	WND-DIR		WW-CODE	
LON 77-090W	HR 22.4	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
224	0000	0021	03060		0241	14074
224	0009	-0118	30126		2424	14372
224	0018	-0148	28061		2257	14330
224	0027	-0103	30761		2475	14390
224	0053	-0108	32446		2611	14416

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C-REF-NO 001	YR 1963	DEPTH	106	WAVES 1	XX	AIR T	VIS
CONS. NO 022	MONTH 7	MXSAMPD	01	WAVES 2	XX	WET B	STN 020
LAT 81-242N	DAY 09	NO.DPTH	6	WND-DIR		WW-CODE	
LON 77-100W	HR 20.9	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
209	0000	0065	03230		0257	14098
209	0009	-0120	30087		2421	14370
209	0018	-0143	30174		2428	14362
209	0027	-0101	30762		2475	14391
209	0046	-0085	31959		2571	14419
209	0104	-0087	33815		2721	14453

C-REF-NO 001	YR 1963	DEPTH 180	WAVES 1	XX	AIR T	VIS
CONS. NO 023	MONTH 7	MXSAMPD 02	WAVES 2	XX	WET B	STN 021
LAT 81-240N	DAY 10	NO.DPTH 7	WND-DIR		WW-CODE	
LON 77-140W	HR 00.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
003	0000	-0004	03170		0248	14063
003	0009	-0123	30115		2423	14369
003	0018	-0146	30202		2430	14361
003	0027	-0110	30782		2477	14387
003	0046	-0080	31879		2564	14420
003	0091	-0100	33621		2706	14442
003	0177	-0042	34275		2756	14493

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C-REF-NO 001	YR 1963	DEPTH 61	WAVES 1	XX	AIR T	VIS
CONS. NO 024	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN 022
LAT 81-230N	DAY 11	NO.DPTH 5	WND-DIR		WW-CODE	
LON 77-030W	HR 21.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
212	0000	0062	02930		0232	14093
212	0009	-0094	30087		2420	14382
212	0018	-0141	30174		2428	14363
212	0027	-0099	30829		2480	14393
212	0060	-0119	32805		2640	14417

C-REF-NO 001	YR 1963	DEPTH	31	WAVES 1	XX	AIR T	VIS
CONS. NO 025	MONTH 7	MXSAMPD	00	WAVES 2	XX	WET B	STN 023
LAT 81-220N	DAY 11	NO.DPTH	4	WND-DIR		WW-CODE	
LON 77-140W	HR 23.4	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
234	0000	0109	03300		0264	14120
234	0009	-0098	30081		2420	14380
234	0018	-0124	30152		2426	14371
234	0029	-0094	30887		2485	14397

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C-REF-NO 001	YR 1963	DEPTH	131	WAVES 1	XX	AIR T	VIS
CONS. NO 026	MONTH 7	MXSAMPD	01	WAVES 2	XX	WET B	STN 024
LAT 81-225N	DAY 13	NO.DPTH	7	WND-DIR		WW-CODE	
LON 77-180W	HR 21.2	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
212	0000	0062	02950		0234	14093
212	0009	-0104	30100		2421	14378
212	0018	-0139	30162		2427	14364
212	0027	-0115	30807		2479	14385
212	0046	-0082	31965		2571	14420
212	0091	-0098	33619		2705	14443
212	0130	-0066	34071		2741	14471

C-REF-NO 001	YR 1963	DEPTH 228	WAVES 1	XX	AIR T	VIS
CONS. NO 027	MONTH 7	MXSAMPD 02	WAVES 2	XX	WET B	STN 025
LAT 81-233N	DAY 14	NO.DPTH 8	WND-DIR		WW-CODE	
LON 77-150W	HR 00.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
003	0000	0043	02950		0233	14083
003	0009	-0108	30134		2424	14376
003	0018	-0144	30187		2429	14362
003	0027	-0095	30852		2482	14396
003	0046	-0083	31016		2495	14407
003	0091	-0096	33645		2707	14445
003	0183	-0038	34280		2756	14496
003	0227	-0034	34274		2756	14505

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C-REF-NO 001	YR 1963	DEPTH 81	WAVES 1	XX	AIR T	VIS
CONS. NO 028	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN 026
LAT 81-242N	DAY 15	NO.DPTH 6	WND-DIR		WW-CODE	
LON 77-080W	HR 01.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	0042	02970		0234	14083
018	0009	-0109	30089		2421	14375
018	0018	-0143	30175		2426	14362
018	0027	-0096	30844		2481	14395
018	0046	-0086	32003		2575	14419
018	0079	-0108	33392		2687	14434

C-REF-NO 001	YR 1963	DEPTH 62	WAVES 1	XX	AIR T	VIS
CONS. NO 029	MONTH 8	MXSAMPD 00	WAVES 2	XX	WET B	STN 027
LAT 81-246N	DAY 16	NO.DPTH 3	WND-DIR		WW-CODE	
LON 77-050W	HR 16.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARU		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
170	0000					
174	0009		01510			
176	0018	-0118	30081		2420	14372

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C-REF-NO 001	YR 1963	DEPTH 62	WAVES 1	XX	AIR T	VIS
CONS. NO 030	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 028
LAT 81-254N	DAY 16	NO.DPTH 5	WND-DIR		WW-CODE	
LON 76-590W	HR 23.9	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARU		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
239	0000	0150	01320		0106	14115
239	0009	-0057	30053		2416	14399
239	0018	-0138	30132		2425	14364
239	0027	-0090	30935		2488	14399
239	0060	-0116	32902		2648	14420

C-REF-NO 001	YR 1963	DEPTH 112	WAVES 1	XX	AIR T	VIS
CONS. NO 031	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 029
LAT 81-242N	DAY 18	NO.DPTH 6	WND-DIR		WW-CODE	
LON 77-010W	HR 17.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
170	0000	0076	01420		0110	14080
170	0009	-0072	30068		2418	14392
170	0018	-0131	30127		2424	14367
170	0027	-0099	30822		2480	14393
170	0046	-0093	33871		2726	14442
170	0110	-0080				

C-REF-NO 001	YR 1963	DEPTH 159	WAVES 1	XX	AIR T	VIS
CONS. NO 032	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 030
LAT 81-238N	DAY 18	NO.DPTH 7	WND-DIR		WW-CODE	
LON 77-070W	HR 21.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
212	0000	0064	01970		0154	14081
212	0009	-0049	30074		2418	14403
212	0018	-0137	30156		2427	14364
212	0027	-0093	30854		2482	14396
212	0046	-0093	32136		2585	14418
212	0091	-0096	33664		2709	14445
212	0142	-0056	34151		2747	14479

1964

GENERAL INFORMATION

<u>Observation platform:</u>	Land based survey party
<u>Total number of stations occupied:</u>	36
<u>Air temperature:</u>	Fixed Thermometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)



C-REF-NO 001	YR 1964	DEPTH	65	WAVES 1	XX	AIR T -17.0	VIS
CONS. NO 001	MONTH 5	MXSAMPD	00	WAVES 2	XX	WET B	STN A
LAT 81-246N	DAY 08	NO.DPTH	6	WND-DIR		WW-CODE	
LON 77-080W	HR 05.6	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
069	0000	-0093				
056	0005	-0006				
059	0010	-0022				
062	0020	-0109				
066	0030	-0092				
068	0050	-0109				

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C-REF-NO 001	YR 1964	DEPTH	145	WAVES 1	XX	AIR T -17.2	VIS
CONS. NO 002	MONTH 5	MXSAMPD	01	WAVES 2	XX	WET B	STN 001
LAT 81-000N	DAY 12	NO.DPTH	8	WND-DIR	360	WW-CODE	
LON 79-200W	HR 11.2	W-COLOR		WND-SPD	02	CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	0 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
141	0005	-0105	28292		2275	14352
141	0010	-0085	29559		2377	14379
135	0020	-0132	30532		2457	14372
135	0030	-0182	30776		2477	14354
124	0050	-0095	32078		2581	14416
124	0075	-0121	32989		2655	14421
112	0100	-0094	33660		2709	14447
112	0145	-0057	34838		2802	14488

C-REF-NO 001 YR 1964 DEPTH 316 WAVES 1 XX AIR T -09.0 VIS  
 CONS. NO 003 MONTH 5 MXSAMPD 03 WAVES 2 XX WET B STN 002  
 LAT 80-405N DAY 14 NO.DPTH 10 WND-DIR 050 WW-CODE  
 LON 80-310W HR 07.1 W-COLOR WND-SPD 06 CLD-TPE 8  
 MARSD SQ 909 C/I 1813 W-TRNSP BARO CLD-AMT 6 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
115	0005	-0125	28327		2279	14343
118	0010	-0123	29575		2379	14362
111	0020	-0127	30322		2440	14372
111	0030	-0127	30876		2485	14381
108	0050	-0127	32362		2605	14405
103	0075	-0120	33151		2668	14424
080	0101	-0098	33686		2711	14446
079	0152		34180			
072	0202	-0013	34231		2751	14510
071	0316	0001	34423		2766	14538

C-REF-NC 001 YR 1964 DEPTH 65 WAVES 1 XX AIR T -09.2 VIS  
 CONS. NO 004 MONTH 5 MXSAMPD 00 WAVES 2 XX WET B STN A  
 LAT 81-246N DAY 15 NO.DPTH 6 WND-DIR WW-CODE  
 LON 77-080W HR 09.7 W-COLOR WND-SPD CLD-TPE  
 MARSD SQ 908 C/I 1813 W-TRNSP BARO CLD-AMT HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
097	0000	-0090	18130		1455	14219
100	0005	0001	28623		2299	14406
105	0010	-0010	29560		2375	14415
102	0020	-0096	30217		2431	14385
107	0030	-0092	30863		2483	14398
109	0050	-0103				

C-REF-NO 001	YR 1964	DEPTH 355	WAVES 1	XX	AIR T	VIS
CONS. NO 005	MONTH 5	MXSAMPD 04	WAVES 2	XX	WET B	STN 003
LAT 80-422N	DAY 19	NO.DPTH 11	WND-DIR 270	WW-CODE		
LON 86-480W	HR 17.0	W-COLOR	WND-SPD 02	CLD-TPE 3		
MARSD SQ 909	C/I 1813	W-TRNSP	BARO	CLD-AMT 6	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
204	0005	-0143	31712		2552	14381
202	0010	-0135	28981		2331	14348
199	0020	-0151	29796		2398	14353
197	0030	-0161	30534		2457	14360
195	0040	-0131	30687		2469	14378
170	0050	-0126	32353		2604	14406
190	0075	-0109	30725		2472	14395
175	0101	-0092	33634		2706	14448
185	0202	-0081	33558		2700	14469
160	0253	-0133	34677		2792	14469
179	0355	0025	34818		2797	14561

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C-REF-NO 001	YR 1964	DEPTH 199	WAVES 1	XX	AIR T -01.0	VIS
CONS. NO 006	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 004
LAT 81-011N	DAY 21	NO.DPTH 9	WND-DIR 270	WW-CODE		
LON 85-420W	HR 10.8	W-COLOR	WND-SPD 01	CLD-TPE 3		
MARSD SQ 909	C/I 1813	W-TRNSP	BARO	CLD-AMT 3	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
131	0005	-0031	29189		2346	14399
129	0010	-0041	29859		2400	14404
128	0020	-0102	30475		2452	14386
126	0030	-0128	30879		2485	14381
107	0050	-0126	32342		2603	14406
125	0075	-0113	33209		2673	14428
114	0101	-0012	33736		2711	14487
111	0151	-0052	34189		2750	14483
108	0199	-0008	34419		2766	14514

C-REF-NO 001 YR 1964 DEPTH 127 WAVES 1 XX AIR T -06.0 VIS  
 CONS. NO 007 MONTH 5 MXSAMPD 01 WAVES 2 XX WET B STN 005  
 LAT 81-040N DAY 21 NO.DPTH 7 WND-DIR WW-CODE  
 LON 84-500W HR 19.1 W-COLOR WND-SPD CLD-TPE  
 MARSD SQ 909 C/I 1813 W-TRNSP BARO CLD-AMT 0 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
204	0005	-0151	29071		2339	14341
202	0010	0021	29888		2400	14433
191	0020	-0066	30481		2451	14403
200	0030	-0121	30895		2486	14384
198	0050	-0124	32413		2609	14408
195	0075	-0108	33245		2676	14431
193	0101	-0088	33753		2716	14452

C-REF-NO 001 YR 1964 DEPTH 505 WAVES 1 00X0 AIR T -06.0 VIS  
 CONS. NO 008 MONTH 5 MXSAMPD 05 WAVES 2 XX WET B STN 006  
 LAT 81-088N DAY 22 NO.DPTH 11 WND-DIR CALM WW-CODE  
 LON 86-090W HR 18.4 W-COLOR WND-SPD 00 CLD-TPE  
 MARSD SQ 909 C/I 1813 W-TRNSP BARO CLD-AMT 0 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
214	0002	-0063				
189	0005	-0148	29545		2377	14349
219	0010	-0146	30150		2426	14359
218	0020	-0157	30579		2461	14361
184	0030	-0153	30716		2472	14367
215	0050	-0151	32337		2603	14394
212	0075	-0141	33161		2670	14414
210	0101	-0142	33675		2711	14425
205	0203	-0010	34558		2778	14516
209	0306	0019	34764		2793	14549
191	0504	0026	34815		2796	14586

C-REF-NO 001	YR 1964	DEPTH 502	WAVES 1	XX	AIR T	VIS
CONS. NO 009	MONTH 5	MXSAMPD 05	WAVES 2	XX	WET B	STN 007
LAT 81-122N	DAY 23	NO.DPTH 10	WND-DIR 180		WW-CODE	
LON 85-480W	HR 14.8	W-COLOR	WND-SPD 01		CLD-TPE	7
MARSD SQ 909	C/I 1813	W-TRNSP	BARO		CLD-AMT	1 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
177	0005	-0134	30155		2426	14364
177	0010	-0144	29551		2378	14351
174	0020	-0144	30230		2433	14363
174	0030	-0148	30603		2463	14367
170	0050	-0153	32284		2599	14392
170	0075	-0141	33185		2672	14414
148	0101	-0143	33590		2705	14424
148	0202	-0015	34555		2778	14513
157	0303	0015	34763		2793	14547
157	0501		34791			

C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T -05.3	VIS
CONS. NO 010	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN B
LAT 81-241N	DAY 24	NO.DPTH 8	WND-DIR		WW-CCDE	
LON 77-170W	HR 08.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
098	0000	-0098	23060	1290	1853	14282
097	0010	-0026	28801	920	2315	14397
097	0020	-0100	30018	920	2415	14380
095	0030	-0107	30759	880	2475	14389
092	0050	-0105	32190	790	2590	14413
090	0075			550		
089	0100	-0106	33696	470	2712	14442
085	0170	-0073	34238		2755	14477

C-REF-NO 001	YR 1964	DEPTH 552	WAVES 1	XX	AIR T	VIS
CONS. NO 011	MONTH 5	MXSAMPD 05	WAVES 2	XX	WET B	STN 008
LAT 81-039N	DAY 24	NO.DPTH 12	WND-DIR 280	WW-CODE		
LON 87-010W	HR 18.0	W-COLOR	WND-SPD 01	CLD-TPE		
MARSD SQ 909	C/I 1813	W-TRNSP	BARO	CLD-AMT 0	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0000	-0062	11710		0938	14146
180	0005	-0143	29133		2344	14345
180	0010	-0142	29531		2376	14352
186	0020	-0159	30532		2457	14360
186	0030	-0154	30717		2472	14366
202	0050	-0151	32258		2597	14393
206	0075	-0136	33107		2665	14416
206	0101	-0119	33695		2712	14436
202	0202	-0008	34552		2777	14516
198	0303	0023	34769		2793	14550
192	0405	0023	34810		2796	14568
192	0506	0031	34817		2796	14588

C-REF-NO 001	YR 1964	DEPTH 357	WAVES 1	XX	AIR T -05.0	VIS
CONS. NO 012	MONTH 5	MXSAMPD 04	WAVES 2	XX	WET B	STN 009
LAT 81-234N	DAY 29	NO.DPTH 11	WND-DIR 230	WW-CODE		
LON 89-570W	HR 20.0	W-COLOR	WND-SPD 04	CLD-TPE 3		
MARSD SQ 909	C/I 1813	W-TRNSP	BARO	CLD-AMT 8	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
229	0000	-0039	06880		0547	14094
200	0005	-0156	29916		2407	14350
200	0010	-0158	30118		2424	14353
205	0020	-0161	20800		1670	14224
210	0030	-0150	30653		2467	14367
215	0050	-0138	32332		2603	14400
222	0075	-0125	33132		2667	14421
222	0101	-0097	33705		2712	14447
219	0202	-0008	34552		2777	14516
215	0303	0022	34790		2795	14550
210	0356	0023	34801		2795	14560

C-REF-NO 001	YR 1964	DEPTH 158	WAVES 1	XX	AIR T -05.0	VIS
CONS. NO 013	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 010
LAT 81-181N	DAY 30	NO.DPTH 9	WND-DIR 180		WW-CODE	
LCN 90-280W	HR 17.5	W-COLOR	WND-SPD 10		CLD-TPE 7	
MARSD SQ 910	C/I 1813	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
189	0000	-0057	11280		0903	14143
175	0005	-0153	30010		2415	14353
175	0010	-0162	30599		2463	14357
179	0020	-0161	30676		2469	14361
189	0030	-0163	30671		2469	14361
187	0050	-0136	32188		2591	14399
187	0075	-0121	33131		2667	14423
184	0101	-0088	33698		2711	14451
184	0158	-0040	34303		2758	14491

C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T -01.0	VIS
CONS. NO 014	MONTH 5	MXSAMPD 01	WAVES 2	XX	WET B	STN B
LAT 81-241N	DAY 31	NO.DPTH 7	WND-DIR		WW-CODE	
LCN 77-170W	HR 09.0	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
097	0000	-0095	21620	1430	1737	14264
096	0010	-0022	29219	1020	2348	14404
094	0020	-0091	30145	1010	2425	14386
094	0030	-0099	30680	960	2468	14392
092	0050	-0100	32271	820	2597	14417
092	0075	-0116	33126	580	2666	14425
090	0100	-0096	33717	520	2713	14447

C-REF-NO 001	YR 1964	DEPTH 292	WAVES 1	XX	AIR T -03.5	VIS
CONS. NO 015	MONTH 6	MXSAMPD 03	WAVES 2	XX	WET B	STN 011
LAT 81-342N	DAY 02	NO.DPTH 11	WND-DIR 140	WW-CODE		
LON 92-350W	HR 08.7	W-COLOR	WND-SPD 04	CLD-TPE 6		
MARSD SQ 910	C/I 1813	W-TRNSP	BARO	CLD-AMT 8	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
097	0000	-0162				
087	0005	-0166	30817		2480	14358
087	0010	-0165	30805		2479	14359
093	0020	-0165	30811		2480	14361
093	0030	-0164	30803		2479	14363
097	0050	-0163	30815		2480	14367
106	0075	-0125	32943		2652	14419
110	0101	-0099	33677		2710	14445
110	0202	-0007	34555		2777	14517
108	0253	0019	34751		2792	14540
097	0291	0025	34712		2788	14548

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C-REF-NO 001	YR 1964	DEPTH 507	WAVES 1	XX	AIR T 04.0	VIS
CONS. NO 016	MONTH 6	MXSAMPD 05	WAVES 2	XX	WET B	STN 012
LAT 81-285N	DAY 02	NO.DPTH 12	WND-DIR 140	WW-CODE		
LON 93-06CW	HR 15.0	W-COLOR	WND-SPD 04	CLD-TPE 6		
MARSD SQ 910	C/I 1813	W-TRNSP	BARO	CLD-AMT 8	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
185	0000	-0166	30832		2482	14357
150	0005	-0167	30853		2483	14358
150	0010	-0175	30832		2482	14355
154	0020	-0164	30811		2480	14361
154	0030	-0165	30839		2482	14363
170	0050	-0160	30825		2481	14368
168	0075	-0134	32456		2612	14408
168	0101	-0077	32388		2605	14438
170	0202	-0116	34602		2786	14467
164	0303	0028	34808		2796	14553
159	0405	0033	34844		2798	14573
159	0506	0030	34865		2800	14589

C-REF-NO 001	YR 1964	DEPTH 405	WAVES 1	XX	AIR T -07.0	VIS
CONS. NO 017	MONTH 6	MXSAMPD 04	WAVES 2	XX	WET B	STN 013
LAT 81-340N	DAY 03	NO.DPTH 11	WND-DIR 040	WW-CODE		
LON 93-100W	HR 16.6	W-COLOR	WND-SPD 03	CLD-TPE 6		
MARSD SQ 910	C/I 1813	W-TRNSP	BARO	CLD-AMT 9	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
176	0000	-0162	30910		2488	14360
166	0005	-0166	30870		2485	14359
166	0010	-0162	30852		2483	14361
170	0020	-0163	30829		2481	14362
170	0030	-0166	30850		2483	14362
181	0050	-0161	30829		2481	14368
189	0075	-0129	34571		2784	14440
186	0101	-0093	32635		2626	14434
189	0202	-0007	32958		2648	14495
186	0303	0030	34805		2795	14554
176	0404	0029	34831		2797	14571

C-REF-NO 001	YR 1964	DEPTH 597	WAVES 1	XX	AIR T 03.5	VIS
CONS. NO 018	MONTH 6	MXSAMPD 06	WAVES 2	XX	WET B	STN 015
LAT 80-580N	DAY 07	NO.DPTH 10	WND-DIR 040	WW-CODE		
LON 89-400W	HR 01.0	W-COLOR	WND-SPD 05	CLD-TPE 6		
MARSD SQ 909	C/I 1813	W-TRNSP	BARO	CLD-AMT 8	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	-0121				
010	0005	-0137	29576		2380	14354
010	0010	-0153	30289		2438	14357
013	0020	-0152	30251		2434	14359
013	0030	-0162	30665		2468	14362
021	0050	-0136	32266		2597	14400
025	0075	-0119	33171		2670	14425
023	0101	-0090	33734		2714	14450
023	0202	-0009	34573		2779	14516
021	0596	0028	34852		2799	14602

C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 01.7	VIS
CONS. NO 019	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN B
LAT 81-241N	DAY 07	NO.DPTH 8	WND-DIR		WW-CODE	
LON 77-170W	HR 12.7	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
136	0000	0030				
136	0005	0030	27130	1000	2178	14399
134	0010	0020	29079	1010	2335	14422
133	0020	-0070	30064	1020	2418	14395
131	0030	-0095	30730	950	2472	14394
130	0050	-0077	32102	860	2582	14425
128	0075	-0106	33156	530	2668	14431
127	0100	-0088	33175	580	2669	14443

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C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 03.1	VIS
CONS. NO 020	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN B
LAT 81-241N	DAY 15	NO.DPTH 8	WND-DIR		WW-CODE	
LON 77-170W	HR 06.2	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
069	0000	0057	25200	1010	2023	14384
068	0005	-0030	27783	1030	2233	14380
065	0010	0018	28892	1030	2320	14418
067	0020	-0031	30089	1030	2418	14414
067	0030	-0084	32064	970	2579	14418
062	0050	-0081	33169	910	2669	14438
062	0075	-0110	33665	590	2710	14436
064	0100	-0086	33716	540	2713	14452

C-REF-NO 001	YR 1964	DEPTH	231	WAVES 1	XX	AIR T 01.7	VIS
CONS. NO 021	MONTH 6	MXSAMPD	01	WAVES 2	XX	WET B	STN B
LAT 81-241N	DAY 22	NO.DPTH	8	WND-DIR		WW-CODE	
LON 77-170W	HR 11.5	W-COLOR		WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
132	0000	0028				
131	0005	0028	29069		2334	14425
128	0010	0017	30149		2421	14435
126	0020	-0052	30099		2420	14404
124	0030	-0075	30708		2470	14403
121	0050	-0070	32176		2588	14429
116	0075	-0101	33249		2676	14434
115	0100	-0079	33763		2716	14456

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C-REF-NO 001	YR 1964	DEPTH	231	WAVES 1	XX	AIR T 04.1	VIS
CONS. NO 022	MONTH 6	MXSAMPD	02	WAVES 2	XX	WET B	STN 171
LAT 81-241N	DAY 29	NO.DPTH	9	WND-DIR	230	WW-CODE	
LON 77-170W	HR 12.8	W-COLOR		WND-SPD	06	CLD-TPE	6
MARSD SQ 908	C/I 1813	W-TRNSP		BARO		CLD-AMT	8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
128	0005	0059	28831		2314	14436
148	0010	0003	29753		2390	14423
148	0020	-0089	30241		2432	14389
145	0030	-0091	30915		2487	14399
141	0050	-0109	32447		2611	14415
141	0075	-0107	33320		2682	14432
135	0101	-0111	32444		2611	14422
135	0151	-0049	34166		2748	14484
128	0202	-0034	34276		2756	14501

C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 05.5	VIS
CONS. NO 023	MONTH 6	MXSAMPD .02	WAVES 2	XX	WET B	STN 172
LAT 81-241N	DAY 29	NO.DPTH 8	WND-DIR	230	WW-CODE	
LON 77-170W	HR 21.1	W-COLOR	WND-SPD		CLD-TPE 6	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
211	0005	0065	28777		2309	14438
215	0010	0014	29701		2386	14428
224	0020	-0088	30299		2437	14390
224	0030	-0093	30879		2484	14397
221	0050	-0110	32405		2608	14414
215	0075	-0113	33324		2682	14430
211	0100	-0090	33766		2717	14451
217	0231	-0037	34310		2759	14505

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C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 04.3	VIS
CONS. NO 024	MONTH 6	MXSAMPD .01	WAVES 2	XX	WET B	STN 173
LAT 81-241N	DAY 30	NO.DPTH 7	WND-DIR	240	WW-CODE	
LON 77-170W	HR 02.6	W-COLOR	WND-SPD	01	CLD-TPE 6	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
026	0005	0058	28575		2293	14432
029	0010	-0030	30010		2412	14411
035	0020	-0089	30275		2435	14389
032	0030	-0090	30903		2486	14399
032	0050	-0107	32407		2608	14415
029	0075	-0110	33320		2682	14431
026	0100	-0087	33758		2716	14452

C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 04.9	VIS
CONS. NO 025	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN 174
LAT 81-241N	DAY 30	NO.DPTH 7	WND-DIR 200	WW-CODE		
LON 77-170W	HR 14.5	W-COLOR	WND-SPD 05	CLD-TPE 6		
MARSD SQ 908	C/I 1813	W-TRNSP	BARU	CLD-AMT 8	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
145	0005	0059	28852		2316	14436
148	0010	0010	29680		2384	14425
153	0020	-0087	30237		2432	14390
151	0030	-0091	30893		2485	14398
151	0050	-0105	32389		2606	14416
147	0075	-0107	33325		2682	14432
145	0100	-0085	33762		2717	14453

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C-REF-NO 001	YR 1964	DEPTH 78	WAVES 1	XX	AIR T 01.6	VIS
CONS. NO 026	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN 018
LAT 81-243N	DAY 03	NO.DPTH 6	WND-DIR 040	WW-CODE		
LON 77-169W	HR 16.7	W-COLOR	WND-SPD 02	CLD-TPE 7		
MARSD SQ 908	C/I 1813	W-TRNSP	BARU	CLD-AMT 6	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
182	0005	0019	28567		2294	14413
178	0010	0002	29704		2386	14422
175	0020	-0089	30221		2431	14388
174	0030	-0092	30773		2475	14396
170	0050	-0103	32297		2599	14416
167	0075	-0108	33300		2680	14432

C-REF-NO 001	YR 1964	DEPTH 225	WAVES 1	XX	AIR T 01.9	VIS
CONS. NO 027	MONTH 7	MXSAMPD 02	WAVES 2	XX	WET B	STN 019
LAT 81-239N	DAY 03	NO.DPTH 8	WND-DIR 040	WW-CODE		
LON 77-153W	HR 19.8	W-COLOR	WND-SPD 01	CLD-TPE 6		
MARSD SQ 908	C/I 1813	W-TRNSP	BARU	CLD-AMT 5	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
205	0005	0037	28741		2308	14424
203	0010	0016	29685		2384	14428
201	0020	-0086	30196		2429	14389
208	0030	-0092	30823		2479	14397
206	0050	-0105	32317		2600	14415
203	0075	-0112	33284		2679	14430
202	0100	-0089	33780		2718	14451
198	0200	-0037	34310		2759	14499

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C-REF-NO 001	YR 1964	DEPTH 65	WAVES 1	XX	AIR T 03.5	VIS
CONS. NO 028	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN 020
LAT 81-235N	DAY 03	NO.DPTH 6	WND-DIR 130	WW-CODE		
LON 77-121W	HR 23.1	W-COLOR	WND-SPD 01	CLD-TPE 6		
MARSD SQ 908	C/I 1813	W-TRNSP	BARO	CLD-AMT 5	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0005	0032	28871		2318	14424
006	0010	0016	29741		2389	14429
238	0020	-0084	30180		2427	14390
236	0030	-0096	30809		2478	14395
233	0050	-0106	32246		2595	14414
231	0060	-0118	32786		2639	14417

C-REF-NO 001	YR 1964	DEPTH 43	WAVES 1	XX	AIR T 04.3	VIS
CONS. NO 029	MONTH 7	MXSAMPD 00	WAVES 2	XX	WET B	STN 021
LAT 81-228N	DAY 04	NO.DPTH 5	WND-DIR 090	WW-CODE 67		
LON 77-064W	HR 02.0	W-COLOR	WND-SPD 01	CLD-TPE		
MARSD SQ 908	C/I 1813	W-TRNSP	BARO	CLD-AMT		HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
028	0000	0029	00730		0052	14048
026	0005	0021	29020		2331	14421
024	0010	0004	29768		2391	14424
022	0020	-0092	30311		2438	14388
020	0030	-0094	30791		2477	14396

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C-REF-NO 001	YR 1964	DEPTH 231	WAVES 1	XX	AIR T 01.6	VIS
CONS. NO 030	MONTH 7	MXSAMPD 02	WAVES 2	XX	WET B	STN 175
LAT 81-241N	DAY 06	NO.DPTH 8	WND-DIR 140	WW-CODE		
LON 77-170W	HR 17.4	W-COLOR	WND-SPD 04	CLD-TPE 7		
MARSD SQ 908	C/I 1813	W-TRNSP	BARO	CLD-AMT 8		HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
192	0005	0079	28809	1070	2311	14444
188	0010	0018	29742	1020	2389	14430
187	0020	-0087	30208	1020	2430	14389
184	0030	-0089	30872	1010	2483	14399
181	0050	-0113	32318	830	2601	14411
172	0075	-0111	33312	570	2681	14430
142	0100	-0086	33797	550	2719	14453
174	0200	-0038	34300	490	2758	14499

C-REF-NO 001 YR 1964 DEPTH 63 WAVES 1 XX AIR T 02.2 VIS  
 CONS. NO 031 MONTH 7 MXSAMPD 00 WAVES 2 XX WET B STN 022  
 LAT 81-226N DAY 22 NO.DPTH 6 WND-DIR 230 WW-CODE  
 LON 77-048W HR 09.7 W-COLOR WND-SPD 04 CLD-TPE 3  
 MARSD SQ 908 C/I 1813 W-TRNSP BARO CLD-AMT 6 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
110	0003	0052	05740	1050	0459	14124
108	0005	0109	29724	1050	2383	14471
105	0010	0024	29681	1050	2384	14432
102	0020	-0079	30223	1010	2431	14393
100	0030	-0089	30763	970	2474	14398
097	0050	-0098	32328	820	2601	14419

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C-REF-NO 001 YR 1964 DEPTH 64 WAVES 1 XX AIR T 02.5 VIS  
 CONS. NO 032 MONTH 7 MXSAMPD 00 WAVES 2 XX WET B STN 023  
 LAT 81-261N DAY 29 NO.DPTH 5 WND-DIR 040 WW-CODE  
 LON 76-597W HR 11.7 W-COLOR WND-SPD 01 CLD-TPE 3  
 MARSD SQ 908 C/I 1813 W-TRNSP BARO CLD-AMT 3 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
127	0005	0125	28308	1110	2269	14458
124	0010	0032	29785	1040	2392	14437
122	0020	-0087	30336	980	2440	14391
120	0030	-0089	30828	960	2480	14399
117	0050	-0108	32440	790	2610	14415

C-REF-NO 001	YR 1964	DEPTH 192	WAVES 1	XX	AIR T 03.5	VIS
CONS. NO 033	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 024
LAT 81-240N	DAY 05	NO.DPTH 7	WND-DIR	CALM	WW-CODE	
LON 77-134W	HR 14.4	W-COLOR	WND-SPD	06	CLD-TPE	4
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
158	0005	0109	29164	1090	2338	14463
156	0010	0033	29858	1040	2397	14438
154	0020	-0082	30392	970	2444	14394
152	0030	-0088	30840	940	2481	14399
149	0050	-0108	32405	800	2608	14415
147	0075	-0109	33402	560	2688	14433
144	0100	-0082	33857	520	2724	14456

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C-REF-NO 001	YR 1964	DEPTH 79	WAVES 1	XX	AIR T 05.0	VIS
CONS. NO 034	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 026
LAT 81-254N	DAY 05	NO.DPTH 5	WND-DIR		WW-CODE	
LON 77-003W	HR 17.8	W-COLOR	WND-SPD		CLD-TPE	4
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
184	0010	0031	29811		2394	14437
184	0020	-0083	30315		2438	14393
182	0030	-0087	30816		2479	14399
181	0050	-0111	32384		2606	14413
178	0075	-0107	33382		2687	14433

C-REF-NO 001	YR 1964	DEPTH 100	WAVES 1	XX	AIR T 07.0	VIS
CONS. NO 035	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 027
LAT 81-258N	DAY 18	NO.DPTH 8	WND-DIR	040	WW-CODE	
LON 77-024W	HR 15.5	W-COLOR	WND-SPD	05	CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
169	0000	0023	02270	1020	0177	14065
168	0005	0153	29179	1120	2337	14483
166	0010	0040	29764	1050	2390	14440
164	0020	-0070	30359	1030	2441	14399
162	0030	-0084	30807		2478	14401
161	0050	-0110	32375	790	2605	14414
159	0075	-0105	33516	540	2697	14436
155	0100	-0082	33807	560	2720	14455

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C-REF-NO 001	YR 1964	DEPTH 153	WAVES 1	XX	AIR T 03.8	VIS
CONS. NO 036	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STN 028
LAT 81-253N	DAY 25	NO.DPTH 8	WND-DIR	270	WW-CODE	
LON 77-006W	HR 08.5	W-COLOR	WND-SPD	01	CLD-TPE	
MARSD SQ 908	C/I 1813	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
098	0000		03460	1020		
097	0005			1120		
096	0010		29752	1050		
095	0020		30252	1030		
092	0030		30778			
089	0050		32325	790		
086	0075		33332	540		
085	0100		33807	560		

1965

GENERAL INFORMATION

<u>Observation platform:</u>	Land based survey party
<u>Total number of stations occupied:</u>	27
<u>Air temperature:</u>	Fixed thermometer



C-REF-NO 001	YR 1965	DEPTH 229	WAVES 1	XX	AIR T -06.2	VIS 8
CONS. NO 001	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 002
LAT 81-229N	DAY 11	NO.DPTH 12	WND-DIR 040		WW-CCDE	
LON 77-170W	HR 20.0	W-COLOR	WND-SPD 07		CLD-TPE 0	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
200	0003	-0168				
200	0005	-0167	30487		2454	14353
200	0010	-0164	30567		2460	14356
200	0015	-0163	30551		2459	14357
200	0020	-0085	30739		2472	14397
200	0025	-0090	31195		2509	14402
200	0030	-0090	31546		2538	14408
200	0051	-0114				
200	0076	-0119	33249		2676	14426
200	0101	-0159	33510		2698	14415
200	0152	-0077	34145		2747	14471
200	0202	-0039	34409		2767	14500

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C-REF-NO 001	YR 1965	DEPTH 90	WAVES 1	XX	AIR T -01.6	VIS 8
CONS. NO 002	MONTH 5	MXSAMPD 01	WAVES 2	XX	WET B	STN 073
LAT 81-219N	DAY 11	NO.DPTH 9	WND-DIR 040		WW-CCDE	
LON 77-150W	HR 23.5	W-COLOR	WND-SPD 10		CLD-TPE 0	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
235	0003	-0161	30344		2442	14353
235	0005	-0160	29849		2402	14347
235	0010	-0164	30289		2438	14352
235	0016	-0160	30258		2435	14355
235	0021	-0080	30415		2446	14395
235	0026	-0086	30708		2470	14398
235	0031	-0090	31462		2531	14407
235	0052	-0112	32026		2577	14408
235	0077	-0115	32801		2640	14422

C-REF-NO 001 YR 1965 DEPTH 170 WAVES 1 XX AIR T -06.0 VIS 8  
 CONS. NO 003 MONTH 5 MXSAMPD 01 WAVES 2 XX WET B STN 173  
 LAT 81-238N DAY 12 NO.DPTH 11 WND-DIR 040 WW-CODE  
 LON 77-190W HR 02.0 W-COLOR WND-SPD 02 CLD-TPE 6  
 MARSD SQ 908 C/I 18C7 W-TRNSP BARO CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
020	0003	-0165				
020	0005	-0163	30478		2453	14354
020	0010	-0162	30509		2455	14356
020	0015	-0149	30661		2468	14365
020	0020	-0084	30785		2476	14399
020	0025	-0086	31131		2504	14403
020	0030	-0092	31574		2540	14408
020	0050	-0114	32433		2610	14412
020	0076	-0120	32963		2653	14421
020	0101	-0111				
020	0146		34025			

C-REF-NO 001 YR 1965 DEPTH 170 WAVES 1 XX AIR T 02.0 VIS 8  
 CONS. NO 004 MONTH 5 MXSAMPD 02 WAVES 2 XX WET B STN 073  
 LAT 81-142N DAY 12 NO.DPTH 11 WND-DIR 040 WW-CODE  
 LON 78-080W HR 23.0 W-COLOR WND-SPD 02 CLD-TPE 0  
 MARSD SQ 908 C/I 18C7 W-TRNSP BARO CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
230	0003	-0161	30379		2445	14354
230	0005	-0159	30372		2444	14355
230	0010	-0159	30117		2424	14352
230	0015	-0086	30512		2454	14393
230	0020	-0084	30795		2477	14399
230	0025	-0086	31026		2496	14402
230	0030	-0096	31349		2522	14402
230	0050	-0115	32220		2593	14409
230	0076	-0121	32863		2645	14420
230	0101	-0114	33230		2675	14432
230	0152	-0073	33765		2716	14467

C-REF-NO 001	YR 1965	DEPTH 296	WAVES 1 00X0	AIR T -01.6	VIS 8
CONS. NO 005	MONTH 5	MXSAMPD 02	WAVES 2 XX	WET B	STN 073
LAT 81-020N	DAY 13	NO.DPTH 12	WND-DIR CALM	WW-CODE	
LON 78-570W	HR 16.0	W-COLOR	WND-SPD 00	CLD-TPE 4	
MARSC SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0003	-0157				
160	0005	-0110	29777		2395	14370
160	0010	-0065	30388		2444	14400
160	0015	-0089	30647		2465	14394
160	0020	-0104	30894		2485	14391
160	0025	-0101	31225		2512	14398
160	0030	-0112	31525		2537	14397
160	0051	-0128	32817		2642	14411
160	0076	-0126	33090		2664	14420
160	0102	-0115	33515		2698	14436
160	0152	-0077	34211		2753	14472
160	0203	-0042	34574		2780	14501

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C-REF-NO 001	YR 1965	DEPTH 66	WAVES 1 00X0	AIR T 01.4	VIS 8
CONS. NO 006	MONTH 5	MXSAMPD 01	WAVES 2 XX	WET B	STN 073
LAT 81-138N	DAY 13	NO.DPTH 8	WND-DIR CALM	WW-CODE	
LON 78-050W	HR 19.0	W-COLOR	WND-SPD 00	CLD-TPE 0	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0003	-0159	30166		2428	14352
190	0005	-0159	30169		2428	14352
190	0010	-0159	30171		2428	14353
190	0015	-0077	30495		2453	14397
190	0020	-0088	30833		2480	14397
190	0025	-0084	31066		2499	14403
190	0030	-0091	31398		2526	14406
190	0051	-0118	32389		2607	14410

C-REF-NO 001 YR 1965 DEPTH 196 WAVES 1 00X0 AIR T 01.0 VIS 8  
 CONS. NO 007 MONTH 5 MXSAMPD 02 WAVES 2 XX WET 8 STN 073  
 LAT 81-151N DAY 13 NO.DPTH 11 WND-DIR CALM WW-CCDE  
 LON 78-130W HR 22.2 W-COLOR WND-SPD 00 CLD-TPE 0  
 MARSD SQ 908 C/I 1807 W-TRNSP BARO CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
222	0003	-0173	30686		2470	14352
222	0005	-0161	30136		2425	14351
222	0010	-0124	30153		2426	14369
222	0015	-0082	30305		2437	14392
222	0020	-0089	30675		2467	14395
222	0025	-0087	31034		2496	14401
222	0030	-0089	31434		2529	14407
222	0051	-0114	32201		2591	14409
222	0076	-0122	32769		2637	14418
222	0101	-0112	33322		2682	14434
222	0152	-0074	33963		2732	14469

C-REF-NO 001 YR 1965 DEPTH 265 WAVES 1 00X0 AIR T -08.0 VIS 8  
 CONS. NO 008 MONTH 5 MXSAMPD 02 WAVES 2 XX WET 8 STN 073  
 LAT 80-478N DAY 14 NO.DPTH 12 WND-DIR CALM WW-CCDE  
 LON 79-100W HR 16.5 W-COLOR WND-SPD 00 CLD-TPE  
 MARSD SQ 908 C/I 1807 W-TRNSP BARO CLD-AMT 0 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
165	0003	-0161				
165	0005	-0057	29865		2401	14396
165	0010	-0080	30451		2449	14394
165	0015	-0112	30691		2469	14383
165	0020	-0127	30960		2491	14381
165	0025	-0125	31245		2514	14387
165	0030	-0123	31802		2559	14396
165	0051	-0130	32508		2617	14406
165	0076	-0125	33059		2661	14420
165	0102	-0117	33518		2698	14435
165	0153	-0075	34158		2748	14472
165	0203	-0040	34504		2775	14501

C-REF-NO 001	YR 1965	DEPTH 422	WAVES 1	XX	AIR T -00.5	VIS 8
CONS. NO 009	MONTH 5	MXSAMPD 04	WAVES 2	XX	WET B	STN 073
LAT 80-329N	DAY 15	NO.DPTH 14	WND-DIR 020	WW-CCDE		
LON 81-135W	HR 20.5	W-COLOR	WND-SPD 05	CLD-TPE	7	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT	7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
205	0003	-0161				
205	0005	-0159	30122		2424	14351
205	0010	-0160	30097		2422	14351
205	0015	-0093	30195		2429	14385
205	0020	-0114	30542		2457	14381
205	0025	-0129	30565		2459	14375
205	0030	-0137	30844		2482	14376
205	0051	-0130	31760		2556	14396
205	0076	-0122	32657		2628	14416
205	0102	-0106	33402		2688	14438
205	0152	-0070	33913		2728	14471
205	0203	-0034	34095		2741	14498
205	0305		34678			
205	0406		34586			

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C-REF-NO 001	YR 1965	DEPTH 526	WAVES 1	XX	AIR T	VIS 7
CONS. NO 010	MONTH 5	MXSAMPD 05	WAVES 2	XX	WET B	STN 073
LAT 80-238N	DAY 16	NO.DPTH 14	WND-DIR 020	WW-CCDE		
LON 84-115W	HR 16.0	W-COLOR	WND-SPD 05	CLD-TPE	4	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT	7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0005		30168			
160	0010	-0095	30388		2444	14386
160	0015	-0127	30725		2472	14377
160	0020		30926			
160	0025	-0144	31142		2506	14376
160	0030	-0140	31565		2541	14385
160	0050	-0128	32374		2606	14405
160	0075	-0114	32837		2643	14422
160	0100	-0117	30231		2432	14389
160	0150	-0072	33912		2728	14469
160	0200	-0045	34271		2756	14495
160	0300	0015	34716		2789	14545
160	0400	0028	34827		2797	14569
160	0500	0031	34815		2796	14587

C-REF-NO 001	YR 1965	DEPTH 406	WAVES 1	XX	AIR T -06.8	VIS 8
CONS. NO 011	MONTH 5	MXSAMPD 04	WAVES 2	XX	WET B	STN 073
LAT 80-143N	DAY 17	NO.DPTH 14	WND-DIR 270	WW-CCDE		
LON 86-535W	HR 01.5	W-COLOR	WND-SPD 02	CLD-TPE 7		
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT 1	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
015	0003	-0143				
015	0005	-0136	29002		2333	14347
015	0011	-0143	29968		2411	14358
015	0016	-0158	30637		2466	14361
015	0021	-0165	30833		2482	14361
015	0026	-0168	30714		2472	14359
015	0031	-0169	31158		2508	14365
015	0051	-0133				
015	0076		32881			
015	0102	-0102	32896		2647	14433
015	0152	-0072	33523		2697	14464
015	0203	-0042	34290		2757	14497
015	0305	0008	34400		2764	14539
015	0406	0024	34612		2780	14566

C-REF-NO 001	YR 1965	DEPTH 419	WAVES 1 00X0	AIR T 03.7	VIS 7
CONS. NO 012	MONTH 5	MXSAMPD 04	WAVES 2 XX	WET B	STN 073
LAT 81-155N	DAY 19	NO.DPTH 14	WND-DIR CALM	WW-CCDE	
LON 85-260W	HR 19.0	W-COLOR	WND-SPD 00	CLD-TPE 7	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0003	-0042				
190	0005	-0126	28762		2314	14348
190	0010	-0155	30531		2457	14360
190	0015	-0158	30852		2483	14364
190	0020	-0166	31010		2496	14363
190	0025	-0161	31121		2505	14368
190	0030	-0162	31343		2523	14371
190	0051	-0154	32278		2599	14392
190	0076	-0152	32865		2646	14405
190	0102	-0139	33318		2682	14422
190	0152	-0080	33955		2732	14467
190	0203	-0042	34312		2759	14498
190	0305	0010	34720		2790	14544
190	0406	0029	34813		2796	14571

C-REF-NO 001	YR 1965	DEPTH 88	WAVES 1	XX	AIR T -00.7	VIS 8
CONS. NO 013	MONTH 5	MXSAMPD 01	WAVES 2	XX	WET B	STN 073
LAT 81-100N	DAY 20	NO.DPTH 9	WND-DIR	040	WW-CCDE	
LON 82-430W	HR 13.8	W-COLOR	WND-SPD	03	CLD-TPE 7	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
138	0002	-0146				
138	0005	0011	28264		2270	14406
138	0010	0023	30304		2434	14440
138	0015	-0085	30658		2466	14396
138	0020	-0095	30935		2489	14396
138	0025	-0094	31110		2503	14399
138	0030	-0095	30907		2486	14397
138	0051	-0116	32402		2608	14411
138	0076	-0099	33412		2689	14438

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C-REF-NO 001	YR 1965	DEPTH 169	WAVES 1	XX	AIR T 00.0	VIS 8
CONS. NO 014	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 073
LAT 81-052N	DAY 20	NO.DPTH 11	WND-DIR	020	WW-CCDE	
LON 83-220W	HR 19.8	W-COLOR	WND-SPD	03	CLD-TPE 7	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
198	0003	-0148				
198	0005	-0082	27813		2236	14356
198	0010	0041	30387		2440	14449
198	0015	-0091	30695		2469	14393
198	0020	-0122	30874		2484	14382
198	0025	-0126	31062		2500	14384
198	0030	-0113	31381		2525	14395
198	0051	-0128	32395		2607	14406
198	0076	-0121	32927		2650	14420
198	0102	-0105				
198	0152	-0063	34035		2738	14476

C-REF-NO 001	YR 1965	DEPTH 258	WAVES 1	XX	AIR T -01.0	VIS 6
CONS. NO 015	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 073
LAT 81-040N	DAY 20	NO.DPTH 12	WND-DIR	040	WW-CCDE	
LON 86-550W	HR 22.5	W-COLOR	WND-SPD	02	CLD-TPE	7
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT	8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
225	0003	-0043				
225	0005	-0055	28342		2278	14376
225	0010	-0146	30565		2460	14365
225	0015	-0156	30835		2482	14364
225	0020	-0159	30999		2495	14366
225	0025	-0161	31085		2502	14367
225	0030	-0158	31367		2525	14373
225	0050	-0148				
225	0075	-0147	32874		2647	14407
225	0100	-0133	33335		2684	14424
225	0150	-0077	33951		2732	14468
225	0200	-0041	34304		2759	14497

C-REF-NO 001	YR 1965	DEPTH 187	WAVES 1	XX	AIR T -00.6	VIS 8
CONS. NO 016	MONTH 5	MXSAMPD 02	WAVES 2	XX	WET B	STN 073
LAT 81-016N	DAY 21	NO.DPTH 11	WND-DIR	040	WW-CCDE	
LON 85-410W	HR 15.3	W-COLOR	WND-SPD	01	CLD-TPE	0
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT	7 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
153	0003	-0125				
153	0005	-0139	28789		2307	14471
153	0010	-0014	30362		2439	14437
153	0015	-0114	30721		2472	14383
153	0020	-0138	30834		2481	14374
153	0025	-0149	31088		2502	14373
153	0030	-0139	31303		2519	14382
153	0050	-0131	32416		2609	14404
153	0075	-0121	32910		2649	14420
153	0101	-0108	33330		2682	14436
153	0151	-0074	33942		2731	14469

C-REF-NO 001	YR 1965	DEPTH	447	WAVES 1	XX	AIR T	04.5	VIS	8
CONS. NO 017	MONTH 5	MXSAMPD	04	WAVES 2	XX	WET B		STN	073
LAT 81-139N	DAY 21	NO.DPTH	14	WND-DIR	040	WW-CCDE			
LON 85-500W	HR 18.0	W-COLOR		WND-SPD	01	CLD-TPE	7		
MARSD SQ 909	C/I 1807	W-TRNSP		BARO		CLD-AMT	2	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
180	0003	-C041				
180	0005	-C077	28318		2277	14365
180	0010	-C052	30589		2459	14409
180	0015	-0162	30845		2483	14362
180	0020	-C159	31002		2495	14366
180	0025	-0160	31144		2507	14369
180	0030	-C157	31369		2525	14374
180	0051	-0152	32277		2598	14393
180	0076	-C152	32886		2648	14405
180	0102	-0140	33300		2681	14421
180	0152	-C077	33972		2733	14468
180	0203	-C041	34297		2758	14498
180	0305	CC11	34719		2789	14545
180	0406	0028	34808		2796	14570

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C-REF-NO 001	YR 1965	DEPTH	112	WAVES 1	XX	AIR T	00.5	VIS	8
CONS. NO 018	MONTH 5	MXSAMPD	01	WAVES 2	XX	WET B		STN	073
LAT 80-343N	DAY 25	NO.DPTH	10	WND-DIR	220	WW-CCDE			
LON 77-590W	HR 23.9	W-COLOR		WND-SPD	01	CLD-TPE	3		
MARSD SQ 908	C/I 1807	W-TRNSP		BARO		CLD-AMT	7	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
239	0003	-0152	29327		2360	14343
239	0005	-0121	29741		2393	14364
239	0010	-C088	30138		2424	14386
239	0015	-C135	30601		2462	14371
239	0020	-C138	30804		2479	14373
239	0025	-0132	31035		2497	14380
239	0030	-C138	31440		2530	14384
239	0051	-0145	32361		2605	14397
239	0076	-0150	32893		2648	14406
239	0102	-0125	33378		2687	14429

C-REF-NO 001 YR 1965 DEPTH 171 WAVES 1 00X0 AIR T 05.5 VIS 7  
 CONS. NO 019 MONTH 5 MXSAMPD 02 WAVES 2 XX WET B STN 073  
 LAT 80-341N DAY 26 NO.DPTH 11 WND-DIR CALM WW-CCDE  
 LON 79-365W HR 22.0 W-COLOR WND-SPD 00 CLD-TPE 7  
 MARSD SQ 908 C/I 1807 W-TRNSP BARO CLD-AMT 8 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0003	-C159	29755		2394	14346
220	0005	-0147	29709		2391	14351
220	0010	-C089	30202		2429	14386
220	0015	-C116	30603		2462	14380
220	0020	-C129	30825		2480	14378
220	0025	-0134	31023		2497	14379
220	0030	-C129	31406		2527	14388
220	0051	-C130	32423		2610	14405
220	0076	-C118	32908		2649	14422
220	0102	-0108	33378		2686	14437
220	0152	-C078	33928		2730	14467

C-REF-NO 001 YR 1965 DEPTH 61 WAVES 1 00X0 AIR T 04.9 VIS 8  
 CONS. NO 020 MONTH 5 MXSAMPD 00 WAVES 2 XX WET B STN 073  
 LAT 80-535N DAY 27 NO.DPTH 8 WND-DIR CALM WW-CCDE  
 LON 76-370W HR 16.3 W-COLOR WND-SPD 00 CLD-TPE 7  
 MARSD SQ 908 C/I 1807 W-TRNSP BARO CLD-AMT 2 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
163	0003	-0144				
163	0005	-C122	29277		2355	14357
163	0010	-C101	30276		2435	14382
163	0015	-0123	30667		2468	14378
163	0020	-C133	30901		2487	14377
163	0025	-C125	31160		2507	14385
163	0030	-C127	31624		2545	14392
163	0050	-C145	32556		2621	14400

C-REF-NO 001	YR 1965	DEPTH 372	WAVES 1 00X0	AIR T 03.6	VIS 8
CONS. NO 021	MONTH 5	MXSAMPD 03	WAVES 2 XX	WET B	STN 073
LAT 80-515N	DAY 27	NO.DPTH 13	WND-DIR CALM	WW-CCDE	
LON 77-550W	HR 22.0	W-COLOR	WND-SPD 00	CLD-TPE 7	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0003	-C154				
220	0005	-C075	29382		2363	14381
220	0010	-C080	30267		2434	14392
220	0015	-C118	30635		2465	14380
220	0020	-C127	30819		2480	14379
220	0025	-0124	31109		2503	14385
220	0030	-C124	31517		2536	14392
220	0051	-0131	32388		2607	14404
220	0076	-C127	32915		2649	14417
220	0101	-0121	33352		2685	14431
220	0152	-0076	33964		2733	14469
220	0203	-C040	34327		2760	14499
220	0304	CC09	34730		2790	14544

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C-REF-NO 001	YR 1965	DEPTH 96	WAVES 1 00X0	AIR T 03.0	VIS 8
CONS. NO 022	MONTH 6	MXSAMPD 01	WAVES 2 XX	WET B	STN 073
LAT 80-573N	DAY 02	NO.DPTH 9	WND-DIR CALM	WW-CCDE	
LON 75-540W	HR 22.0	W-COLOR	WND-SPD 00	CLD-TPE 3	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
220	0003	C103	00520		0039	14082
220	0005	C237	00290		0025	14144
220	0010	C251	00410		0035	14153
220	0015	C253	00410		0035	14155
220	0020	C247	00220		0020	14150
220	0025	C246	00360		0031	14152
220	0030	0242	00500		0042	14153
220	0050	0199	00860		0070	14140
220	0075	0275	25640		2048	14501

C-REF-NO 001	YR 1965	DEPTH 108	WAVES 1	XX	AIR T	VIS
CONS. NO 023	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-240N	DAY 07	NO.DPTH 10	WND-DIR		WW-CCDE	
LON 77-050W	HR 01.8	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0003	-C103				
018	0005	-0143	30460		2451	14364
018	0010	-0149	30540		2458	14363
018	0015	-0151	30540		2458	14363
018	0020	-CC97	30770		2475	14392
018	0025	-C081	31080		2500	14405
018	0030	-C082	31440		2529	14410
018	0050	-C108	32410		2608	14415
018	0075	-C110	32960		2653	14426
018	0100	-C108				

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C-REF-NO 001	YR 1965	DEPTH 108	WAVES 1	XX	AIR T	VIS
CONS. NO 024	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-240N	DAY 14	NO.DPTH 10	WND-DIR		WW-CCDE	
LON 77-050W	HR 20.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
203	0003	-CC07				
203	0005	-C138	30530		2457	14367
203	0010	-C139	30560		2459	14368
203	0015	-C146	30560		2459	14365
203	0020	-C078	30920		2487	14403
203	0025	-CC82	31270		2515	14407
203	0030	-CC87	31700		2550	14412
203	0050	-0112	32490		2615	14414
203	0075	-C119	32900		2648	14421
203	0100	-C107	33510		2697	14439

C-REF-NO 001	YR 1965	DEPTH 108	WAVES 1	XX	AIR T	VIS
CONS. NO 025	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET 8	STN
LAT 81-240N	DAY 22	NO.DPTH 10	WND-DIR		WW-CCDE	
LCN 77-050W	HR 19.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0003	-C146				
193	0005	-C103	30460		2450	14383
193	0010	-C131	30560		2459	14372
193	0015	-C145	30560		2459	14366
193	0020	-C076	30960		2490	14405
193	0025	-C080	31440		2529	14410
193	0030	-C090	31750		2554	14411
193	0050	-C115	32530		2618	14413
193	0075	-C116	33030		2658	14424
193	0100	-C105	33510		2697	14440

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C-REF-NO 001	YR 1965	DEPTH 108	WAVES 1	XX	AIR T	VIS
CONS. NO 026	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET 8	STN
LAT 81-240N	DAY 29	NO.DPTH 10	WND-DIR		WW-CCDE	
LCN 77-050W	HR 19.3	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0003	CC65				
193	0005	-C073	29970		2410	14390
193	0010	-C072	30420		2446	14398
193	0015	-C143	30420		2448	14365
193	0020	-C071	30990		2492	14408
193	0025	-C080	31300		2518	14408
193	0030	-C086	31790		2557	14413
193	0050	-C111	32490		2615	14415
193	0075	-C117	32990		2655	14423
193	0100	-C112	33370		2686	14435

C-REF-NO 001	YR 1965	DEPTH 138	WAVES 1	XX	AIR T	VIS
CONS. NO 027	MONTH 8	MXSAMPD 01	WAVES 2	XX	WET B	STM
LAT 81-230N	DAY 16	NO.DPTH 10	WND-DIR		WW-CODE	
LON 77-200W	HR 01.5	W-COLOR	WND-SPD		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
015	0003	0579				
015	0005	0409	20750		1651	14484
015	0010	0027	30920		2483	14450
015	0015	-0046	30490		2451	14411
015	0020	-0069	30920		2487	14408
015	0025	-0077	31420		2527	14412
015	0030	-0086	31750		2554	14413
015	0050	-0111	32610		2624	14416
015	0075	-0117	33100		2664	14425
015	0100	-0106	33540		2699	14440

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1966

GENERAL INFORMATION

<u>Observation platform:</u>	Ice-Island, drifting platform
<u>Total number of stations occupied:</u>	25
<u>Barometer readings:</u>	Aneroid barometer (corrected)
<u>Surface sea water temperature:</u>	Reversing thermometer
<u>Air temperature:</u>	Fixed thermometer
<u>Wet bulb temperature:</u>	Fixed thermometer



C-REF-NO 001	YR 1966	DEPTH	113	WAVES 1	XX	AIR T -21.0	VIS	8
CONS. NO 001	MONTH 5	MXSAMPD	01	WAVES 2	XX	WET B	STN	
LAT 80-579N	DAY 01	NO.DPTH	15	WND-DIR	090	WW-CCDE 00		
LON 75-324W	HR 17.0	W-COLOR		WND-FCE	03	CLD-TPE		
MARSC SQ 908	C/I 1807	W-TRNSP		BARO	1022.0	CLD-AMT	C	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0005	0116	0002		0001	14083
178	0010	0134	0047		0036	14098
178	0015	0169	0022		0017	14112
185	0020	0179	0022		0018	14118
185	0025	0207	0022		0019	14132
185	0030	0221	0018		0016	14139
195	0040	0223	0027		0023	14143
195	0050	0222	0054		0045	14147
195	0060	0274	2548		2035	14496
216	0070	0277	2553		2039	14500
205	0080	0279	2553		2039	14502
205	0090	0283	2545		2032	14505
216	0095	0283	2545		2032	14505
222	0100	0281	2559		2043	14507
216	0110	0281	2527		2018	14505

C-REF-NO 001	YR 1966	DEPTH	141	WAVES 1	XX	AIR T	VIS
CONS. NO 002	MONTH 5	MXSAMPD	01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 19	NO.DPTH	2	WND-DIR		WW-CCDE	
LON 76-500W	HR 20.7	W-COLOR		WND-SPD		CLD-TPE	
MARSC SQ 908	C/I 1807	W-TRNSP		BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
216	0075	-0153	32881		2647	14405
216	0100	-0145	31532		2538	14393

C-REF-NO 001	YR 1966	DEPTH 165	WAVES 1	XX AIR T -01.0	VIS 8
CONS. NO 003	MONTH 5	MXSAMPD 01	WAVES 2	XX WET B	STN
LAT 81-020N	DAY 21	NO.DPTH 10	WND-DIR	WW-CODE	
LON 85-370W	HR 16.3	W-COLOR	WND-SPD	CLD-TPE 4	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
172	0005	-0005	29687		2385	14418
172	0010	-0022	31060		2496	14430
178	0015	-0101	31260		2515	14396
*178	0020	-0242	31368		2526	14332
185	0025	-0145	31533		2538	14381
185	0030	-0142	31860		2564	14388
189	0050	-0123	32273		2597	14406
185	0075	-0101	32781		2638	14428
178	0100	-0101	33205		2672	14438
172	0150	-0072	33708		2712	14467

\*SEA TEMPERATURE NOT IN RANGE

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX AIR T	VIS 8
CONS. NO 004	MONTH 5	MXSAMPD 01	WAVES 2	XX WET B	STN
LAT 81-250N	DAY 22	NO.DPTH 15	WND-DIR	WW-CODE	
LON 76-500W	HR 21.6	W-COLOR	WND-SPD	CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
217	0000	-0134	30367		2444	14366
218	0002	-0155	30367		2444	14356
221	0004	-0159	30982		2494	14363
223	0005	-0159				
226	0007	-0159	30367		2444	14355
228	0010	-0071	30695		2468	14402
230	0012	-0060	33311		2679	14444
232	0015	-0066	30370		2442	14400
235	0020	-0076	32874		2645	14432
237	0025	-0085	31759		2555	14413
239	0030	-0091	31921		2568	14413
*240	0040	-0103	32207		2591	14413
*243	0050	-0109				
*247	0075	-0115	30377		2444	14387
*249	0100	-0108	33283		2679	14435

\*MULTIPLE CAST CONTINUED NEXT DAY

C-REF-NO 001	YR 1966	DEPTH	627	WAVES 1	XX	AIR T -01.0	VIS	7
CONS. NO 005	MONTH 5	MXSAMPD	06	WAVES 2	XX	WET B	STN	
LAT 81-110N	DAY 23	NO.DPTH	15	WND-DIR	CALM	WW-CCDE		
LCN 86-000W	HR 19.0	W-COLOR		WND-FCE	00	CLD-TPE	4	
MARSD SQ 909	C/I 1807	W-TRNSP		BARO		CLD-AMT	7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
202	0005	-0126	28047		2256	14338
202	0010	-0161	30767		2476	14360
219	0015	-0168	31415		2529	14367
211	0020	-0167	31636		2547	14371
211	0025	-0163	31282		2518	14369
219	0030	-0163	31865		2565	14378
227	0050	-0156	32271		2598	14390
227	0075	-0147	32805		2641	14406
232	0100	-0132	33253		2677	14424
232	0150	-0091	33809		2721	14459
*242	0200	-0034	34385		2765	14502
*242	0300		34707			
232	0400	0029	34791		2794	14569
211	0500	-0173	34792		2803	14493
219	0600	0030	34792		2794	14603

\*MULTIPLE CAST CONTINUED NEXT DAY

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C-REF-NO 001	YR 1966	DEPTH	9	WAVES 1	XX	AIR T -02.0	VIS	8
CONS. NO 006	MONTH 5	MXSAMPD	00	WAVES 2	XX	WET B	STN	
LAT 81-064N	DAY 25	NO.DPTH	2	WND-DIR		WW-CCDE		
LCN 85-500W	HR 16.7	W-COLOR		WND-SPD		CLD-TPE	4	
MARSD SQ 909	C/I 1807	W-TRNSP		BARO		CLD-AMT	2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
170	0002	-0072	1515		1215	14188
172	0005	-0127	29359		2362	14356

C-REF-NO 001	YR 1966	DEPTH 33	WAVES 1 XX	AIR T -03.0	VIS 8
CONS. NO 007	MONTH 5	MXSAMPD 00	WAVES 2 XX	WET B	STN
LAT 81-062N	DAY 25	NO.DPTH 7	WND-DIR CALM	WW-CCDE	
LON 85-510W	HR 17.5	W-COLOR	WND-FCE 00	CLD-TPE 4	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
185	0002	-0074	1494		1198	14184
175	0005	-0116	27544		2215	14336
180	0010	-0155	30906		2488	14365
183	0015	-0162	31494		2535	14371
185	0020	-0161	31677		2550	14375
183	0025	-0156	28398		2285	14332
180	0030	-0163	31872		2566	14378

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C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1 XX	AIR T	VIS 8
CONS. NO 008	MONTH 5	MXSAMPD 01	WAVES 2 XX	WET B	STN
LAT 81-250N	DAY 25	NO.DPTH 15	WND-DIR CALM	WW-CCDE	
LON 76-500W	HR 18.5	W-COLOR	WND-FCE 00	CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO	CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
218	0000	-0129	30338		2441	14368
216	0002	-0151	30365		2444	14358
215	0004	-0157	30387		2446	14356
213	0005	-0160	30382		2445	14355
211	0007	-0160	30387		2446	14355
210	0010	-0147	30409		2447	14362
208	0012	-0057	30851		2481	14411
206	0015	-0063	31104		2501	14412
204	0020	-0073	31481		2532	14413
202	0025	-0083	31699		2550	14413
199	0030	-0091	31879		2565	14412
197	0050	-0109	32391		2607	14414
195	0075	-0115	32841		2643	14422
192	0100	-0108	33256		2676	14435
189	0140	-0085	33741		2715	14459

C-REF-NO 001	YR 1966	DEPTH 40	WAVES 1	XX	AIR T -03.0	VIS 8
CONS. NO 009	MONTH 5	MXSAMPD 00	WAVES 2	XX	WET B	STN
LAT 81-060N	DAY 25	NO.DPTH 7	WND-DIR		WW-CCDE	
LON 85-520W	HR 19.0	W-COLOR	WND-SPC		CLD-TPE 4	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
190	0002	-0081	1503		1205	14182
195	0005	-0124	28887		2324	14351
198	0010	-0153	30883		2486	14366
202	0015	-0157	31473		2533	14373
202	0020	-0161	31685		2551	14375
198	0025	-0163	31840		2563	14377
195	0030	-0162	31903		2568	14379

\*TIME-DISTANCE CHECK FAILED

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C-REF-NO 001	YR 1966	DEPTH 133	WAVES 1	XX	AIR T 01.0	VIS 8
CONS. NO 010	MONTH 5	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-030N	DAY 29	NO.DPTH 9	WND-DIR		WW-CCDE	
LON 85-390W	HR 16.0	W-COLOR	WND-SPC		CLD-TPE 7	
MARSD SQ 909	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
162	0002	-0142	29380		2364	14349
162	0005	-0163	29530		2376	14341
166	0010	0008	30837		2477	14440
166	0015	-0096	31252		2514	14399
170	0020	-0134	31538		2538	14386
170	0025	-0151	31710		2553	14381
170	0030	-0149	31842		2563	14384
166	0050	-0121	32377		2606	14408
162	0075	-0117	32851		2644	14421

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T 04.1	VIS 8
CONS. NO 011	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 01	NO.DPTH 13	WND-DIR		WW-CCDE	
LON 76-500W	HR 02.2	W-COLOR	WND-SPC		CLD-TPE 3	
MARSC SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
024	0000	-0117	29919		2407	14368
025	0002	-0158	30432		2449	14356
027	0004	-0158	30451		2451	14356
028	0007	-0157	30451		2451	14357
030	0010	-0143	30486		2453	14365
031	0012	-0060	30999		2493	14412
033	0015	-0060	31271		2515	14413
036	0020	-0078	31589		2541	14413
037	0030	-0092	31958		2571	14413
040	0050	-0111	32463		2612	14414
041	0075	-0114	32929		2650	14424
043	0100	-0108	33317		2681	14436
046	0140	-0084	33799		2720	14461

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T 02.1	VIS 5
CONS. NO 012	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 07	NO.DPTH 13	WND-DIR		WW-CCDE	
LON 76-500W	HR 02.9	W-COLOR	WND-SPC		CLD-TPE 7	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
031	0000	C157	30505		2443	14502
031	0002	-0156	30464		2452	14357
046	0004	-0162	30490		2454	14355
046	0007	-0154	30454		2451	14359
046	0010	-0155	30479		2453	14359
041	0012	-0137	30531		2457	14369
041	0015	-0062	31135		2504	14413
041	0020	-0074	31558		2538	14414
036	0030	-0091	31959		2571	14413
036	0050	-0106	32474		2613	14417
029	0075	-0115	32920		2649	14423
029	0100	-0102	33343		2683	14439
029	0140	-0080	33793		2719	14462

C-REF-NO 001	YR 1966	DEPTH 50	WAVES 1	XX	AIR T -01.0	VIS 8
CONS. NO 013	MONTH 6	MXSAMPD 00	WAVES 2	XX	WET B	STN
LAT 83-087N	DAY 11	NO.DPTH 5	WND-DIR 180		WW-CCDE	
LON 74-030W	HR 16.0	W-COLOR	WND-FCE 02		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
165	0005	-0166	3158		2542	14369
170	0010	-0164	3234		2604	14381
170	0020	-0169	3213		2587	14377
165	0030	-0164	3225		2597	14383
170	0050	-0163	3227		2598	14387

C-REF-NO 001	YR 1966	DEPTH 367	WAVES 1	XX	AIR T 00.0	VIS 8
CONS. NO 014	MONTH 6	MXSAMPD 03	WAVES 2	XX	WET B	STN
LAT 82-552N	DAY 12	NO.DPTH 14	WND-DIR CALM		WW-CCDE	
LON 73-350W	HR 20.0	W-COLOR	WND-FCE 00		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 0	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
211	0005	0055	0107		0081	14066
211	0010	0017	0124		0093	14050
217	0015	0017	0124		0093	14051
217	0020	0012	0140		0105	14052
223	0025	0003	0127		0094	14046
223	0030	-0001	0176		0134	14051
236	0040	-0013	0283		0220	14061
*241	0045	-0142	3191		2568	14391
233	0050	-0155	3225		2596	14389
236	0075	-0149	3251		2617	14401
236	0100	-0130	3294		2652	14420
230	0150	-0082	3377		2717	14463
226	0200	-0040	3340		2686	14485
211	0300	0024	3473		2790	14550

\*MULTIPLE CAST CONTINUED NEXT DAY

C-REF-NO 001	YR 1966	DEPTH 230	WAVES 1	XX	AIR T -02.0	VIS 8
CONS. NO 015	MONTH 6	MXSAMPD 02	WAVES 2	XX	WET B	STN
LAT 82-507N	DAY 13	NO.DPTH 13	WND-DIR		WW-CCDE	
LON 73-240W	HR 15.5	W-COLOR	WND-SPD		CLD-TPE 3	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
164	0005	0073	0107		0082	14075
164	0010	0051	0107		0081	14065
168	0015	0027	0124		0093	14056
173	0020	0008	0127		0095	14048
173	0025	0002	0127		0094	14046
179	0030	0000	0125		0092	14045
188	0040	-0015	0215		0165	14051
188	0045	-0130	3139		2526	14390
184	0050	-0158	3208		2583	14387
184	0075	-0157	3258		2623	14398
188	0100	-0139	3298		2655	14417
179	0150	-0093	3373		2714	14457
173	0200	-0026	3434		2761	14505

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T 04.5	VIS 8
CONS. NO 016	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 14	NO.DPTH 13	WND-DIR		WW-CCDE	
LON 76-500W	HR 17.5	W-COLOR	WND-SPD		CLD-TPE 6	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 3	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	-0104	29948		2409	14374
186	0002	-0150	30503		2455	14361
186	0004	-0154	30510		2455	14359
186	0007	-0155	30500		2455	14359
190	0010	-0157	30497		2454	14358
190	0012	-0155	30501		2455	14360
190	0015	-0145	30617		2464	14367
193	0020	-0073	31597		2541	14415
193	0030	-0094	32001		2575	14413
193	0050	-0111	32531		2618	14415
197	0075	-0111	33003		2656	14426
197	0100	-0107	33406		2689	14438
197	0140	-0084	33823		2721	14461

C-REF-NO 001	YR 1966	DEPTH 600	WAVES 1	XX	AIR T 01.0	VIS 8
CCNS. NO 017	MONTH 6	MXSAMPD 06	WAVES 2	XX	WFT B	STN
LAT 82-487N	DAY 19	NO.DPTH 15	WND-DIR 360	WW-CCDE		
LON 76-410W	HR 15.3	W-COLOR	WND-FCE 02	CLD-TPE 6		
MARSC SQ 908	C/I 18C7	W-TRNSP	BARO	CLD-AMT 7	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
160	0005	-0021	0471		0372	14076
160	0010	-0137				
168	0015	-0158	3191		2569	14379
168	0020	-0158	3191		2569	14379
175	0025	-0160	3208		2583	14382
175	0030	-0158	3210		2584	14384
181	0050	-0158	3232		2602	14390
181	0075	-0147	3256		2621	14403
186	0100	-0127	3296		2653	14422
186	0150	-0088	3370		2712	14459
186	0200	-0036	3430		2758	14500
181	0300	0024	3466		2784	14549
175	0400	0039	3471		2787	14573
168	0500	0041	3482		2796	14592
160	0600	0041	3482		2796	14608

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T 04.7	VIS 7
CONS. NO 018	MONTH 6	MXSAMPD 01	WAVES 2	XX	WFT B	STN
LAT 81-250N	DAY 21	NO.DPTH 13	WND-DIR		WW-CCDE	
LON 76-500W	HR 20.4	W-COLOR	WND-SPD		CLD-TPE 3	
MARSC SQ 908	C/I 18C7	W-TRNSP	BARO		CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	0052	0306		0242	14089
219	0002	-0015	0538		0427	14087
219	0004	-0146	30480		2453	14362
217	0007	-0149	30482		2453	14362
217	0010	-0145	30511		2455	14364
215	0012	-0139	30548		2458	14368
212	0015	-0060	31191		2508	14415
208	0020	-0076	31606		2542	14414
208	0030	-0091	32003		2575	14414
208	0050	-0111	32572		2621	14416
208	0075	-0109	33002		2656	14427
208	0100	-0104	33416		2689	14439
208	0140	-0083	33789		2719	14461

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T 03.7	VIS 6
CONS. NO 019	MONTH 6	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 28	NO.DPTH 15	WND-DIR	220	WW-CCDE	
LON 76-500W	HR 20.1	W-COLOR	WND-FCE	04	CLD-TPE 7	
MARSC SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
204	0000	-0135				
207	0002	-0011				
210	0004	-0139	30452		2450	14365
216	0007	-0134	30482		2453	14369
212	0010	-0141	30520		2456	14366
216	0012	-0139	30608		2463	14378
228	0013	-0056	31044		2496	14414
230	0014	-0055	31179		2507	14417
212	0015	-0059	31278		2515	14416
219	0020	-0070	31560		2538	14416
219	0030	-0094	32031		2577	14413
219	0050	-0114	32612		2625	14415
224	0075	-0118	33081		2663	14424
224	0100	-0101	33483		2695	14442
224	0140	-0080	33483		2694	14458

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T	VIS 7
CONS. NO 020	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 05	NO.DPTH 13	WND-DIR	240	WW-CCDE	
LON 76-500W	HR 18.7	W-COLOR	WND-FCE	03	CLD-TPE 4	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
193	0000	0063	0163		0127	14076
195	0002	0014	0455		0361	14090
208	0004	-0084	30427		2447	14391
197	0007	-0136	30492		2454	14368
209	0010	-0133	30496		2454	14370
213	0012	-0135	30508		2455	14369
214	0015	-0058	31066		2498	14414
220	0020	-0065	31556		2538	14418
218	0030	-0093	32015		2576	14413
218	0050	-0108	32540		2619	14417
203	0075	-0114	33038		2659	14425
203	0100	-0099	33473		2694	14442
203	0140	-0079	33848		2723	14464

C-REF-NO 001	YR 1966	DEPTH 141	WAVES 1	XX	AIR T	VIS
CONS. NO 021	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN
LAT 81-250N	DAY 12	NO.DPTH 11	WND-DIR		WW-CCDE	
LCN 76-500W	HR 17.0	W-COLOR	WND-SPC		CLD-TPE	
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	0133	0170		0136	14111
187	0005	-0105	30391		2445	14381
183	0010	-0134	30529		2457	14370
187	0015	-0047	31216		2510	14421
183	0020	-0066	31577		2539	14418
178	0025	-0085	31818		2560	14413
178	0030	-0092	32089		2582	14415
178	0050	-0109	32616		2625	14417
172	0075	-0114	33114		2665	14426
172	0100	-0102	33494		2695	14441
172	0140	-0077	33837		2722	14464

C-REF-NO 001	YR 1966	DEPTH 113	WAVES 1	XX	AIR T	VIS	7
CONS. NO 022	MONTH 7	MXSAMPD 01	WAVES 2	XX	WET B	STN	
LAT 81-250N	DAY 16	NO.DPTH 9	WND-DIR	060	WW-CCDE		
LCN 76-500W	HR 15.9	W-COLOR	WND-FCE	02	CLD-TPE		
MARSD SQ 908	C/I 1807	W-TRNSP	BARO		CLD-AMT	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
178	0000	0126	0090		0071	14098
173	0005	-0090				
173	0010	-0137	30509		2455	14368
173	0015	-0058	31310		2518	14417
167	0020	-0079	31652		2546	14413
167	0030	-0100	32088		2582	14411
161	0050	-0113	32636		2626	14416
161	0075	-0117	33095		2664	14425
168	0100	-0098	33511		2697	14443

C-REF-NO 001	YR 1966	DEPTH	45	WAVES 1	XX	AIR T	VIS	7
CONS. NO 023	MONTH 7	MXSAMPD	00	WAVES 2	XX	WET B	STN	
LAT 81-250N	DAY 18	NO.DPTH	8	WND-DIR		WW-CCDE		
LON 76-500W	HR 15.7	W-COLOR		WND-SPD		CLD-TPE		
MARSD SQ 908	C/I 1807	W-TRNSP		BARO		CLD-AMT	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
166	0000	0115	0251		0200	14113
163	0005	-0056	30183		2427	14401
159	0010	-0124	30477		2452	14374
163	0015	-0050	31324		2519	14421
159	0020	-0069	31584		2540	14417
166	0025	-0083	31747		2554	14413
159	0030	-0099	31993		2574	14410
166	0043	-0114	32430		2610	14411

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C-REF-NO 001	YR 1966	DEPTH	71	WAVES 1	XX	AIR T	VIS	
CONS. NO 024	MONTH 7	MXSAMPD	01	WAVES 2	XX	WET B	STN	
LAT 81-250N	DAY 18	NO.DPTH	9	WND-DIR		WW-CCDE		
LON 76-500W	HR 17.3	W-COLOR		WND-SPD		CLD-TPE		
MARSD SQ 908	C/I 1807	W-TRNSP		BARO		CLD-AMT	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
181	0000	0124	0197		0157	14110
185	0005	-0071	30328		2439	14396
181	0010	-0122	30477		2452	14375
185	0015	-0150	31244		2515	14373
181	0020	-0068	31574		2539	14417
185	0025	-0082	31817		2559	14415
177	0030	-0095	32005		2575	14412
177	0050	-0113	32621		2625	14416
177	0070	-0114	33035		2659	14424

C-REF-NO 001	YR 1966	DEPTH	200	WAVES 1	XX	AIR T
CONS. NO 025	MONTH 7	MXSAMPD	02	WAVES 2	XX	WET B
LAT 81-250N	DAY 18	NO.DPTH	12	WND-DIR		WW-CCDE
LON 76-500W	HR 19.3	W-COLOR		WND-SPD		CLD-TPE
MARSD SQ 908	C/I 1807	W-TRNSP		BARO		CLD-AMT

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
208	0000	0125	0192		0153	14110
211	0005	-0078	30343		2440	14393
208	0010	-0123	30517		2455	14375
211	0015	-0045	31259		2513	14423
208	0020	-0072	31614		2543	14416
211	0025	-0087	31809		2559	14412
204	0030	-0093	32036		2577	14413
204	0050	-0113	32640		2627	14416
204	0075	-0116	33429		2691	14430
200	0100	-0100	33511		2697	14442
200	0150	-0072	33992		2735	14470
200	0199	-0039	34295		2758	14498

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## SECTION IV

Bathythermograms

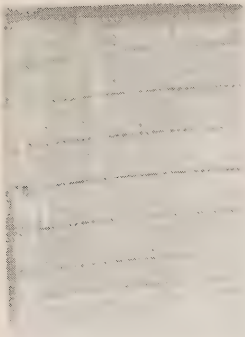


Table 1 A copy of the machine listing of the 1963 bathythermograph data indicating the consecutive slide number, latitude, longitude, day, month and year of the observation.

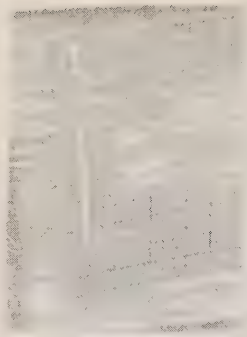
CON No	LAT		LONG		DATE		
	Deg	Min	Deg	Min	Day	Mon	Yr
001	81	24	077	10	26	05	63
002	81	24	077	10	26	05	63
003	81	18	077	51	28	05	63
004	81	12	078	31	29	05	63
005	81	12	078	31	29	05	63
006	80	55	079	07	01	06	63
007	80	50	078	14	01	06	63
008	80	50	078	14	01	06	63
009	80	57	076	00	03	06	63
010	80	50	079	23	06	06	63
011	80	50	079	23	06	06	63
012	81	12	078	31	06	06	63
013	81	12	078	31	06	06	63
014	81	09	079	14	08	06	63
015	81	18	077	51	09	06	63
016	80	41	086	55	13	06	63
017	80	41	086	55	13	06	63
018	83	09	074	04	15	06	63
019	83	09	074	06	16	06	63
020	83	08	073	37	17	06	63
021	83	08	073	37	17	06	63
022	83	07	072	38	17	06	63
023	83	08	073	59	18	06	63
024	83	08	074	43	18	06	63

Table 1 (continued)

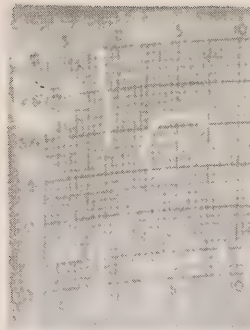
CON No	LAT		LONG		DATE		
	Deg	Min	Deg	Min	Day	Mon	Yr
025	81	26	077	02	27	06	63
026	81	26	077	02	27	06	63
027	81	26	076	58	29	06	63
028	81	24	077	01	30	06	63
029	81	23	077	09	07	07	63
030	81	24	077	10	09	07	63
031	81	24	077	14	10	07	63
032	81	24	077	14	10	07	63
033	81	23	077	03	11	07	63
034	81	22	077	14	11	07	63
035	81	23	077	18	13	07	63
036	81	23	077	15	14	07	63
037	81	23	077	15	14	07	63
038	81	24	077	08	15	07	63
039	81	25	077	05	16	08	63
040	81	25	077	05	16	08	63
041	81	25	077	05	16	08	63
042	81	25	077	05	16	08	63
043	81	25	077	05	16	08	63
044	81	25	076	59	16	08	63
045	81	24	077	01	18	08	63
046	81	24	077	07	18	08	63
047	81	24	077	07	18	08	63



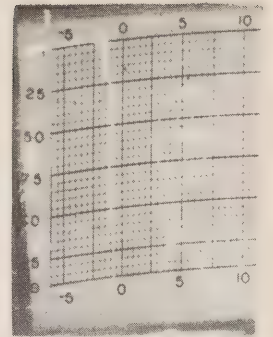
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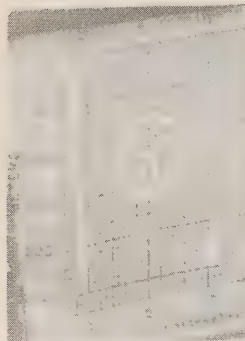
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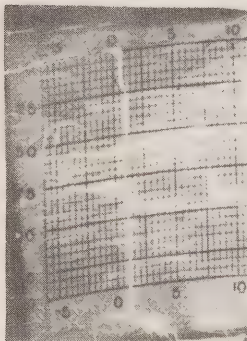
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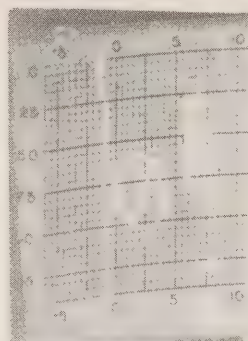
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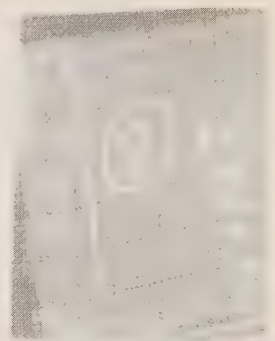
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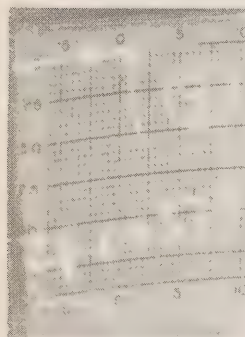
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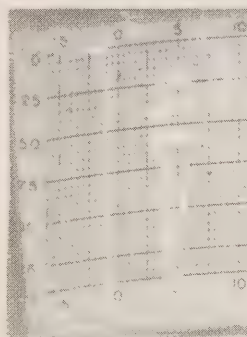
7



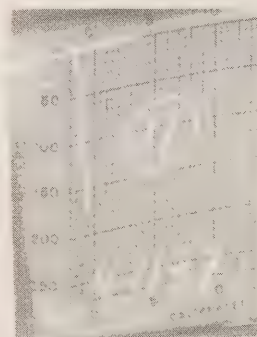
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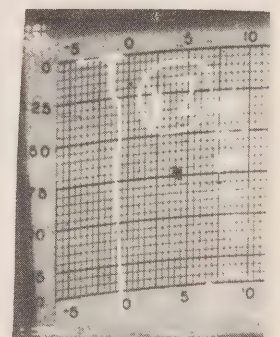
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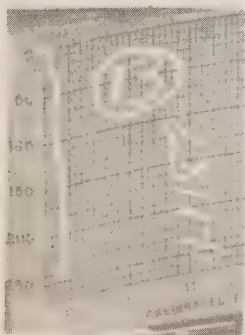
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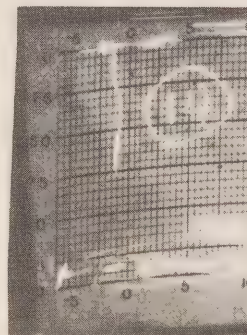
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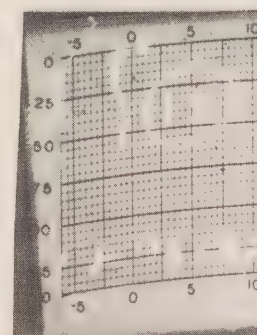
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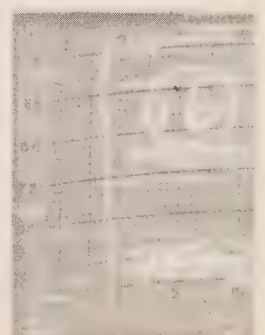
13



14



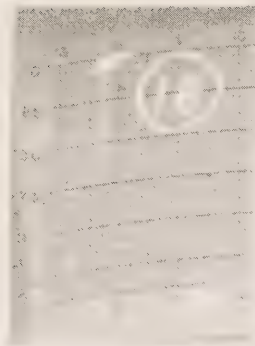
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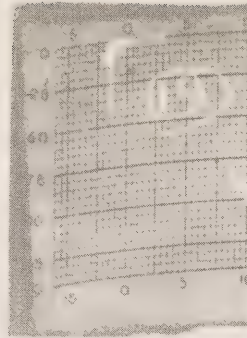
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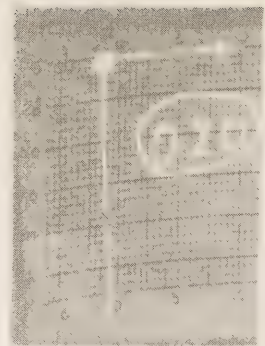
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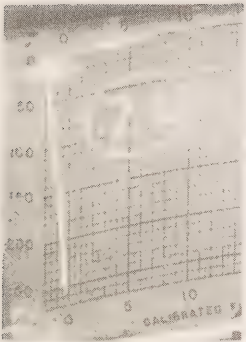
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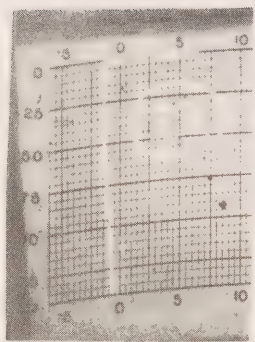
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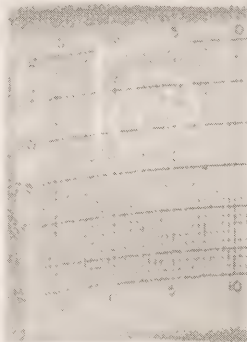
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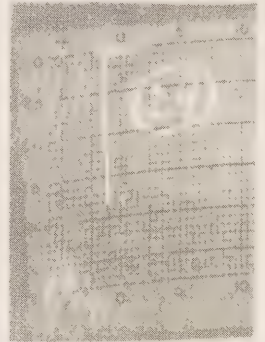
21



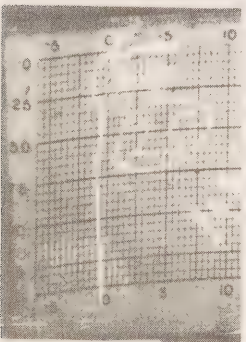
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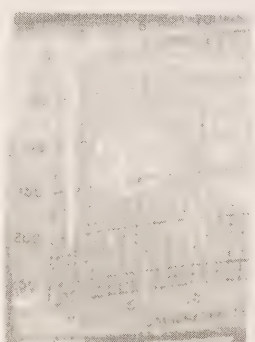
23



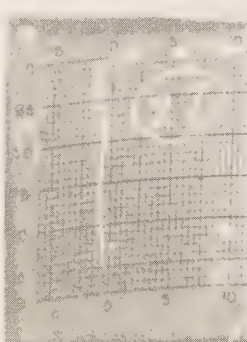
24



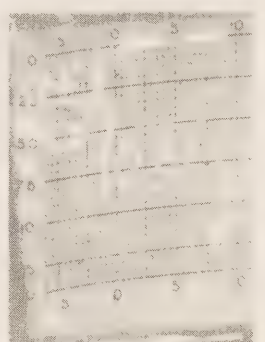
25



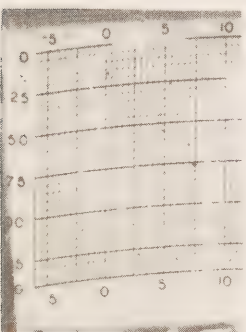
26



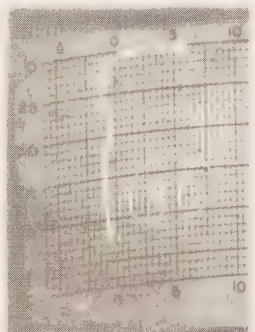
27



28



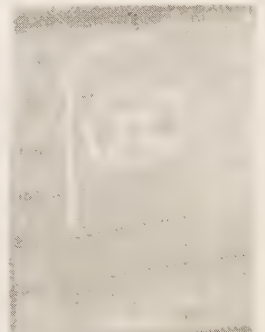
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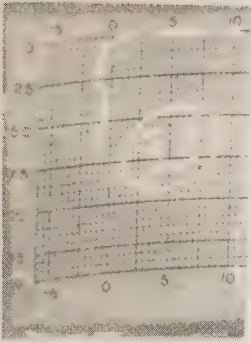
30



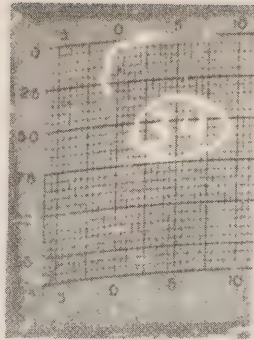
31



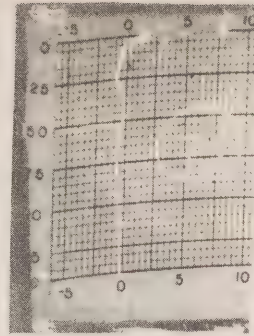
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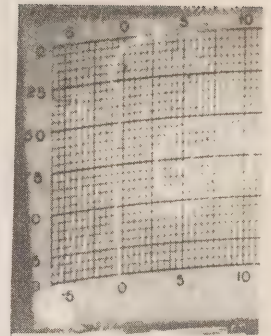
33



34



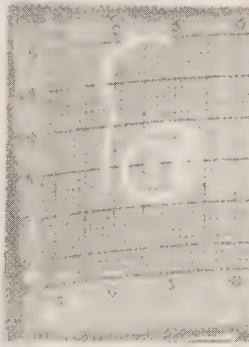
35



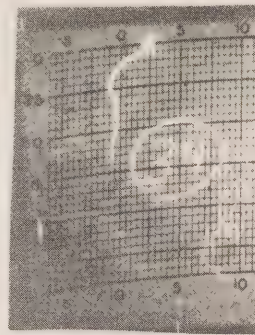
36



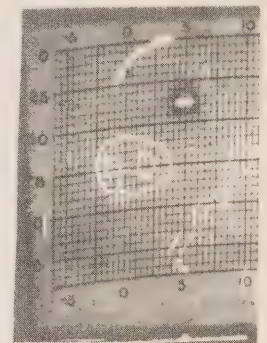
37



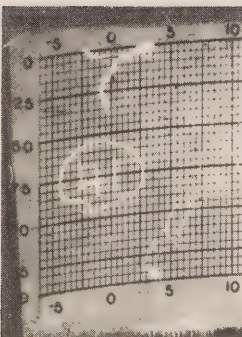
38



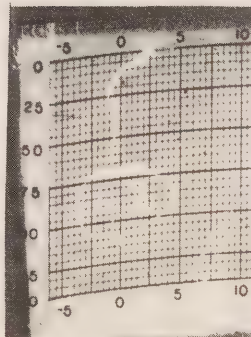
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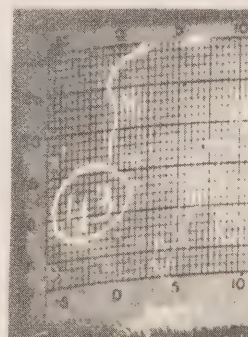
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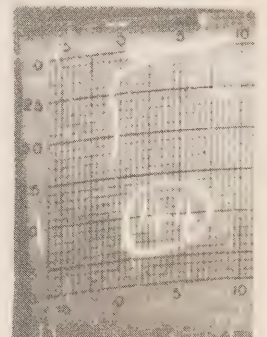
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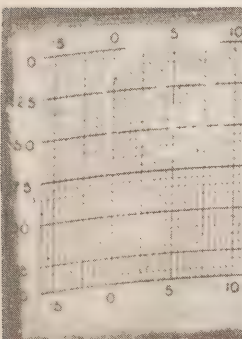
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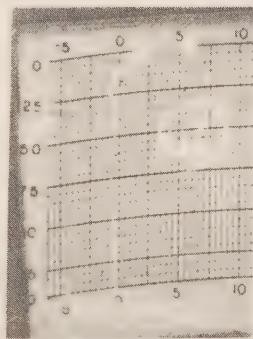
43



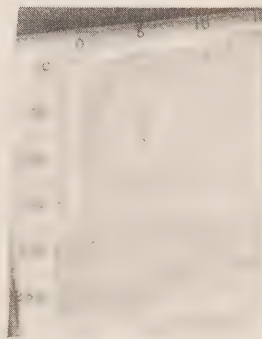
44



45



46



47



Table 2 A copy of the machine listing of the 1964 bathythermograph data indicating the consecutive slide number, latitude, longitude, day, month, year and the Greenwich Mean Time of the observation.

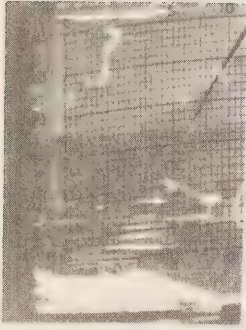
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
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002	81	25	077	08	05	05	64		
003	81	25	077	08	06	05	64		
004	81	25	077	08	08	05	64		
005	80	57	078	08	12	05	64	02	37
006	80	57	078	08	12	05	64	04	12
007	80	57	078	08	12	05	64	06	12
008	80	41	080	43	14	05	64	12	00
009	80	41	080	43	14	05	64	13	00
010	80	41	080	43	14	05	64	16	45
011	81	25	077	08	15	05	64	14	00
012	80	30	083	50	19	05	64	22	00
013	80	30	083	50	19	05	64	22	25
014	80	40	086	40	21	05	64	14	32
015	80	40	086	40	21	05	64	14	45
016	81	04	084	50	21	05	64	23	30
017	81	08	086	05	22	05	64	23	15
018	81	08	086	05	22	05	64	23	46
019	81	15	085	35	23	05	64	19	25
020	81	15	085	35	23	05	64	23	20
021	81	24	077	17	24	05	64		
022	81	03	087	00	25	05	64	22	55
023	81	03	087	00	25	05	64	23	30
024	81	25	089	45	30	05	64	01	00

Table 2 (continued)

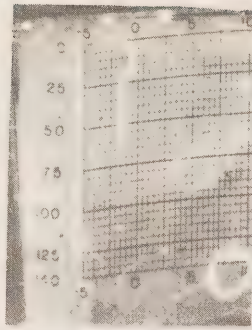
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
025	81	25	089	45	30	05	64	01	20
026	81	19	091	30	30	05	64	22	25
027	81	19	091	30	30	05	64	22	50
028	81	24	077	17	31	05	64		
029	81	33	092	40	02	06	64	13	42
030	81	33	092	40	02	06	64	14	08
031	81	28	093	15	04	06	64	19	50
032	81	28	093	15	04	06	64	20	15
033	81	34	093	10	05	06	64	21	15
034	81	34	093	10	05	06	64	22	15
035	81	16	092	15	06	06	64	13	02
036	81	16	092	15	06	06	64	13	15
037	80	58	089	40	08	06	64	16	00
038	80	58	089	40	08	06	64	16	15
039	81	24	077	17	09	06	64		
040	81	24	077	17	15	06	64		
041	80	54	075	55	22	06	64	06	00
042	80	54	075	55	22	06	64	06	15
043	81	24	077	17	29	06	64	17	00
044	81	24	077	17	29	06	64	17	20
045	81	24	077	17	30	06	64	01	15
046	81	24	077	17	03	07	64	21	35
047	81	24	077	15	04	07	64	00	15
048	81	24	077	15	04	07	64	00	25
049	81	24	077	12	04	07	64	04	40

Table 2 (continued)

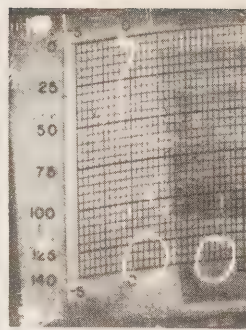
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
050	81	23	077	06	04	07	64	06	55
051	81	24	077	17	07	07	64	02	31
052	81	23	077	05	22	07	64	12	30
053	81	26	077	00	29	07	64	14	00
054	81	24	077	13	05	08	64	14	47
055	81	25	077	00	05	08	64	22	17
056	81	25	077	00	05	08	64	22	41
057	81	26	077	02	18	08	64	20	20
058	81	25	077	01	19	08	64	07	26
059	81	25	077	01	25	08	64	13	00



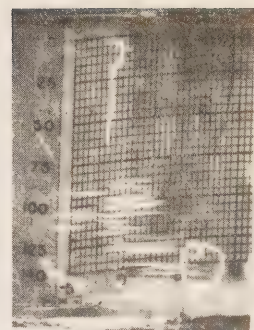
1



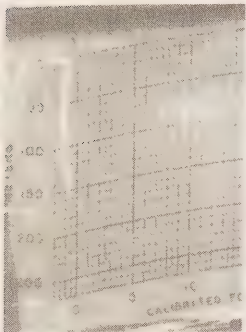
2



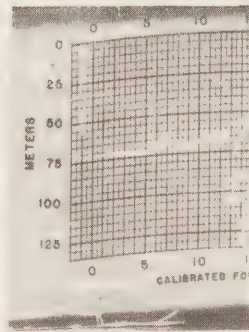
3



4



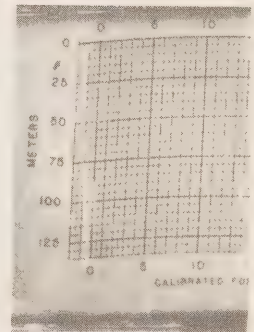
5



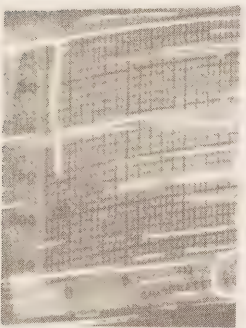
6



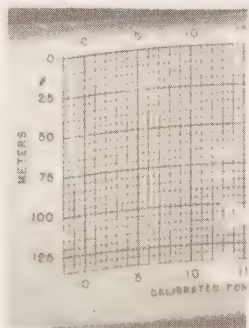
7



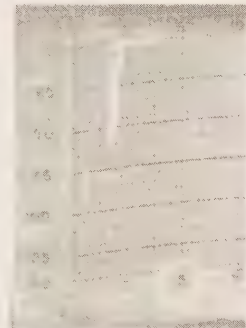
8



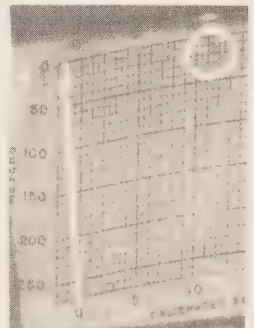
9



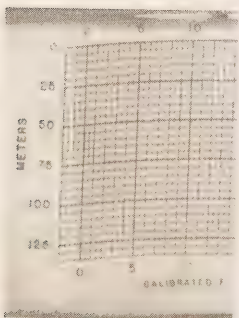
10



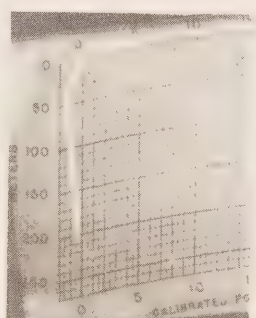
11



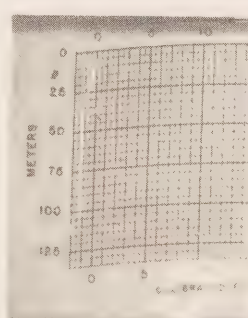
12



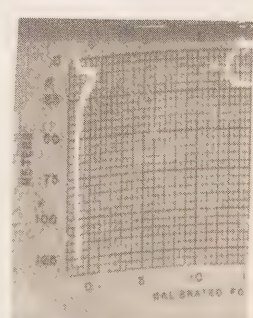
13



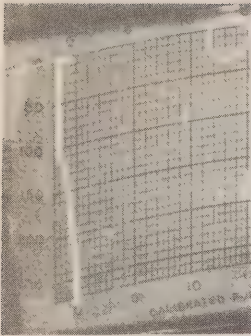
14



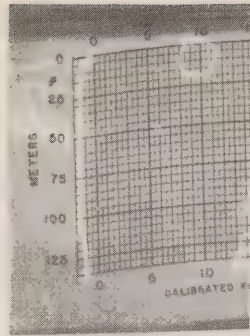
15



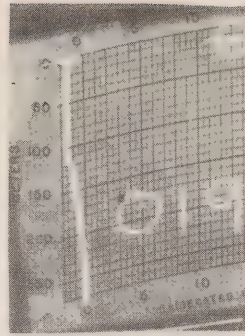
16



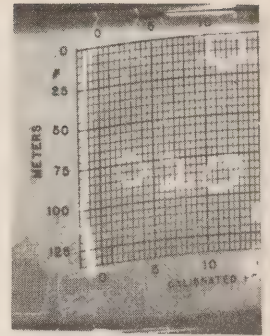
17



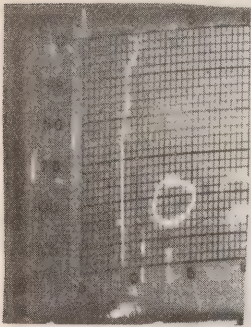
18



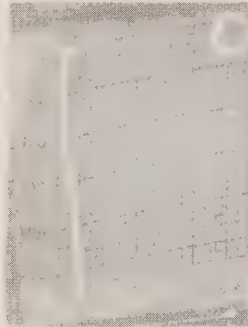
19



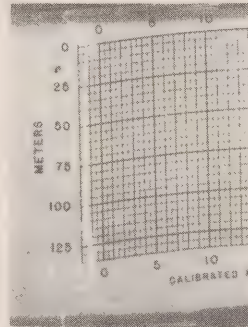
20



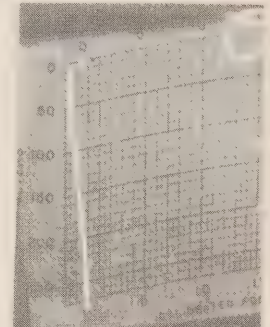
21



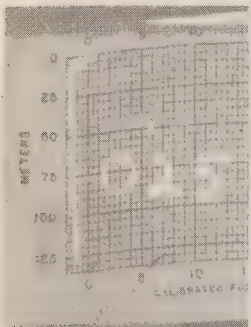
22



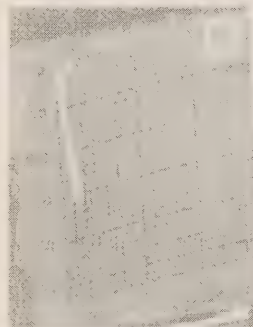
23



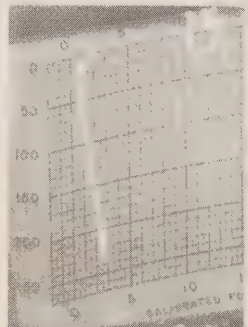
24



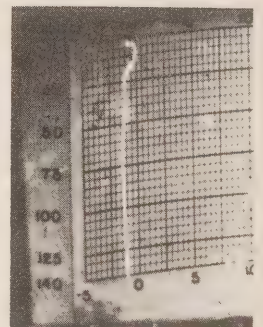
25



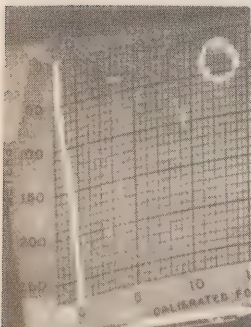
26



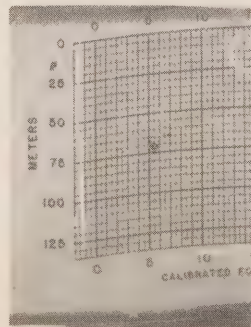
27



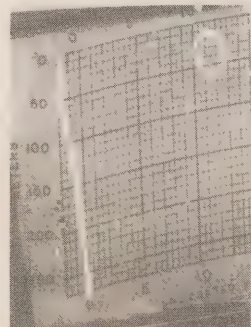
28



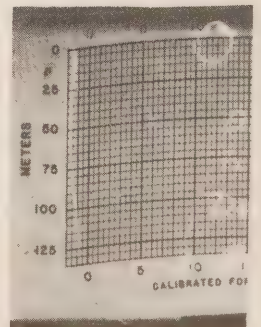
29



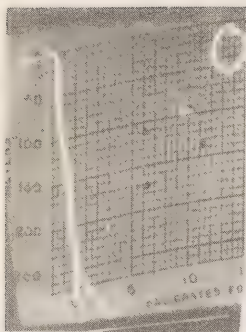
30



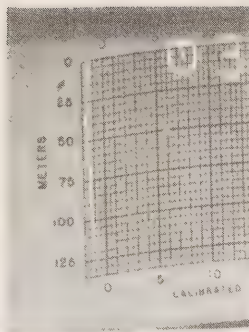
31



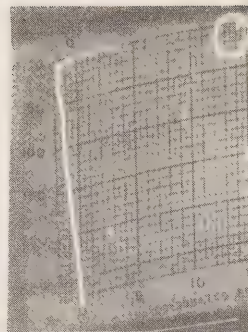
32



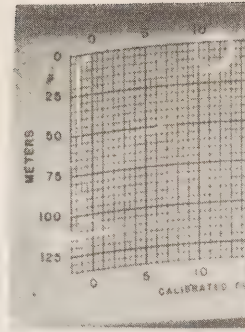
33



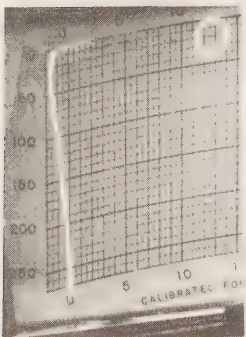
34



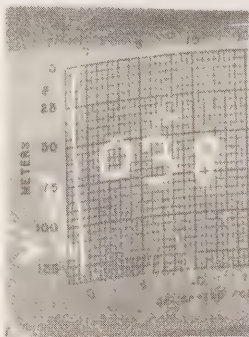
35



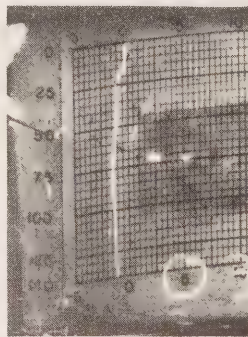
36



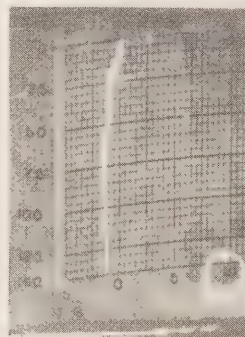
37



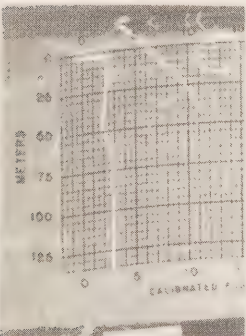
38



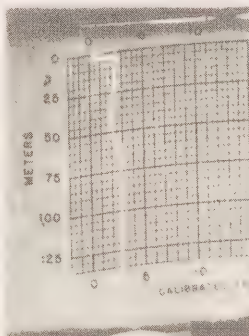
39



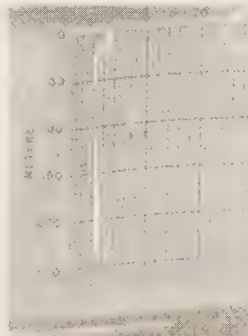
40



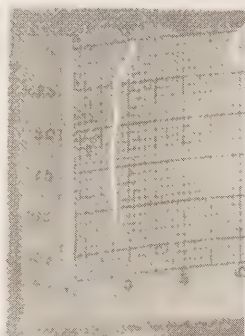
41



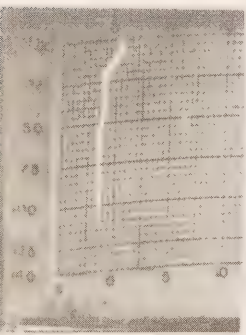
42



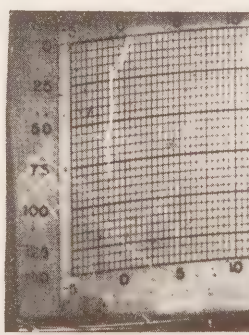
43



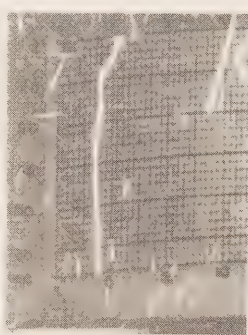
44



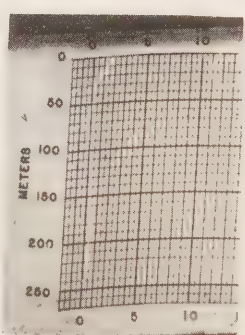
45



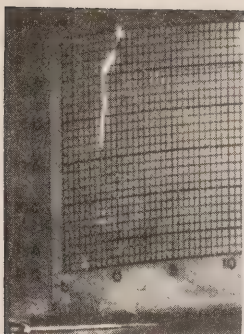
46



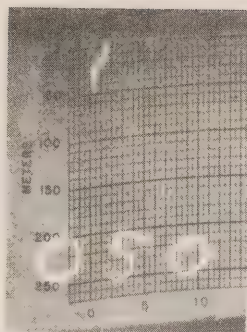
47



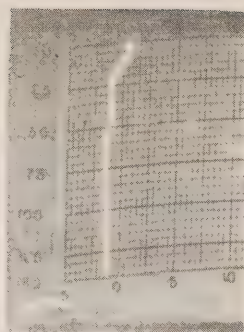
48



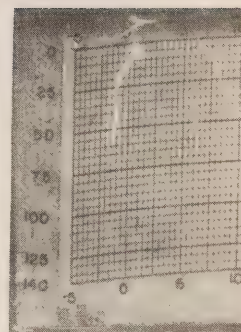
49



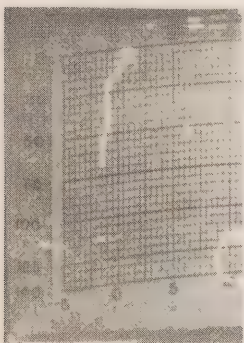
50



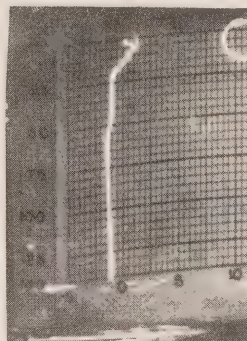
51



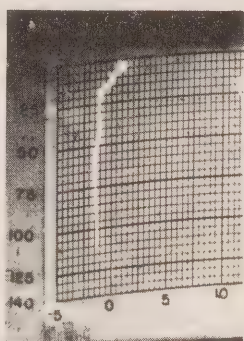
52



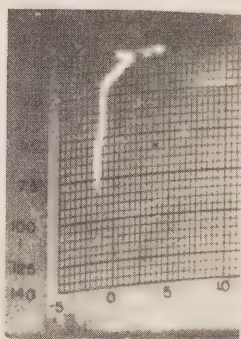
53



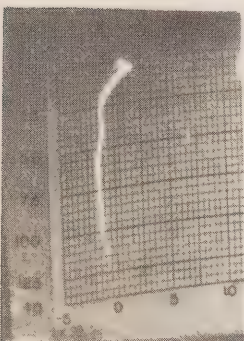
54



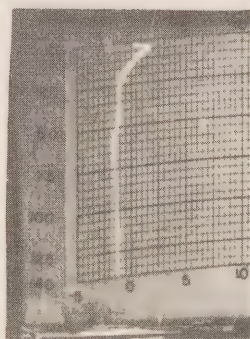
55



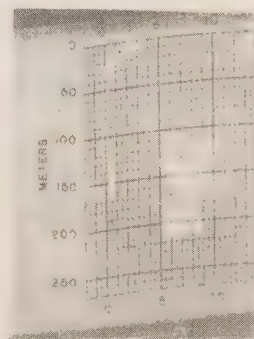
56



57



58



59



Table 3 A copy of the machine listing of the 1965 bathythermograph data indicating the consecutive slide number, latitude, longitude, day, month, year and the Greenwich Mean Time of the observation.

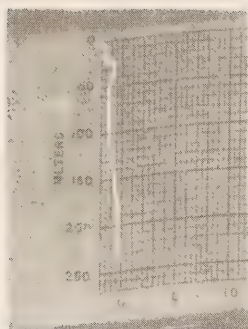
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
001	81	23	077	17	11	05	65	20	00
002	81	23	077	17	11	05	65	20	10
003	81	22	077	15	11	05	65	23	30
004	81	22	077	15	11	05	65	23	40
005	81	24	077	19	12	05	65	02	00
006	81	24	077	19	12	05	65	02	10
007	81	14	078	08	12	05	65	23	00
008	81	14	078	08	12	05	65	23	10
009	81	02	078	57	13	05	65	16	00
010	81	02	078	57	13	05	65	16	10
011	81	14	078	05	13	05	65	19	00
012	81	15	078	13	13	05	65	22	15
013	81	15	078	13	13	05	65	22	25
014	80	48	079	10	14	05	65	16	30
015	80	48	079	10	14	05	65	16	40
016	80	33	081	14	15	05	65	20	30
017	80	33	081	14	15	05	65	20	40
018	80	24	084	12	16	05	65	16	00
019	80	24	084	12	16	05	65	16	00
020	80	14	086	54	17	05	65	01	30
021	80	14	086	54	17	05	65	01	40
022	81	16	085	26	19	05	65	19	00
023	81	16	085	26	19	05	65	19	10
024	81	17	085	11	20	05	65	02	00

Table 3 (continued)

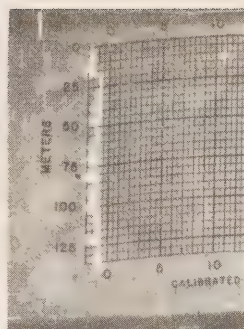
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
025	81	17	085	11	20	05	65	02	10
026	81	10	082	43	20	05	65	13	45
027	81	10	082	43	20	05	65	13	55
028	81	05	083	22	20	05	65	19	45
029	81	05	083	22	20	05	65	19	55
030	81	04	086	55	20	05	65	22	30
031	81	04	086	55	20	05	65	22	40
032	81	02	085	41	21	05	65	15	15
033	81	02	085	41	21	05	65	15	25
034	81	14	085	50	21	05	65	18	00
035	81	14	085	50	21	05	65	18	10
036	80	34	077	59	25	05	65	23	50
037	80	34	079	37	26	05	65	22	00
038	80	54	076	37	27	05	65	16	15
039	80	54	076	37	27	05	65	16	25
040	80	52	077	55	27	05	65	22	00
041	80	52	077	55	27	05	65	22	10
042	80	57	075	54	02	06	65	22	00
043	81	24	077	05	07	06	65	01	45
044	81	24	077	05	14	06	65	20	15
045	81	24	077	05	22	06	65	19	15
046	81	24	077	05	29	06	65	06	30
047	81	22	077	10	13	08	65	09	00
048	81	23	077	09	13	08	65	09	45
049	81	23	077	08	13	08	65	10	30

Table 3 (continued)

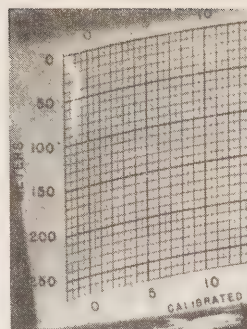
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
050	81	24	077	07	13	08	65	11	15
051	81	24	077	07	13	08	65	12	00
052	81	25	077	06	13	08	65	12	45
053	81	26	077	05	13	08	65	13	30
054	81	23	077	20	16	08	65	01	30



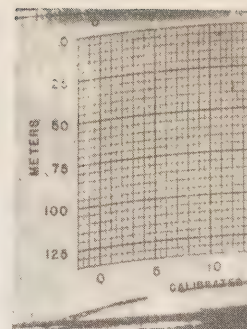
1



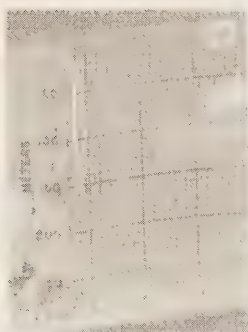
2



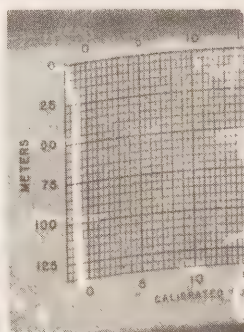
3



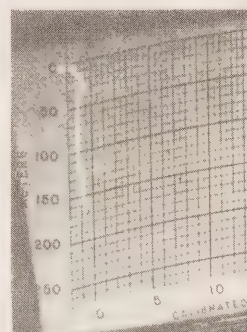
4



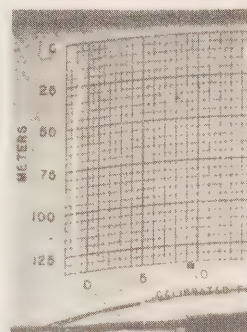
5



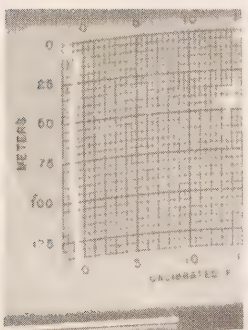
6



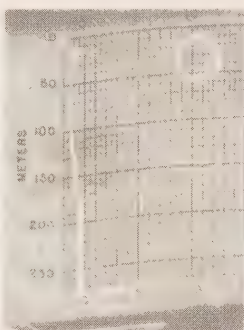
7



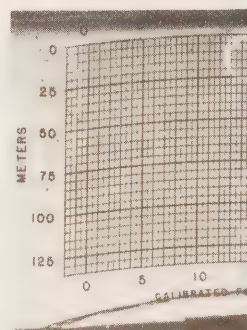
8



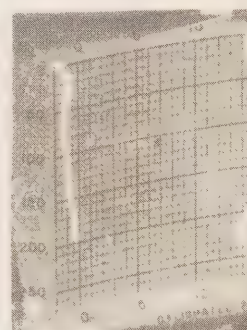
9



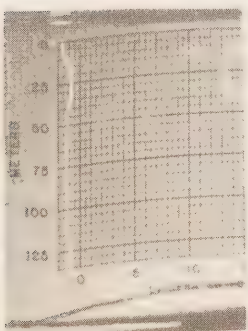
10



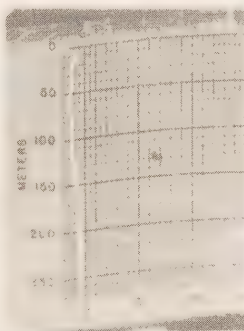
11



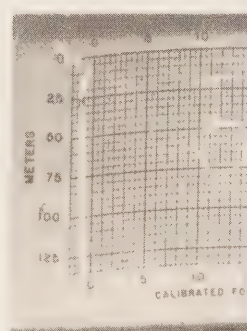
12



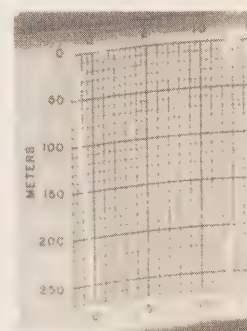
13



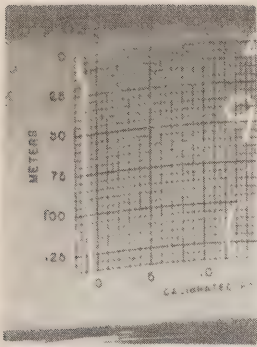
14



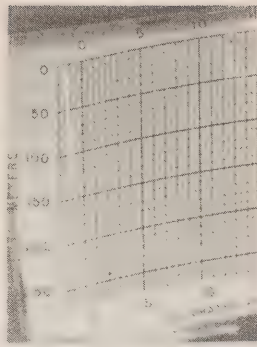
15



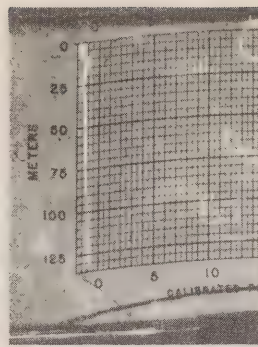
16



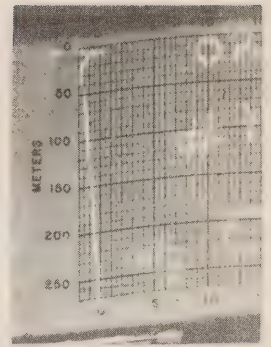
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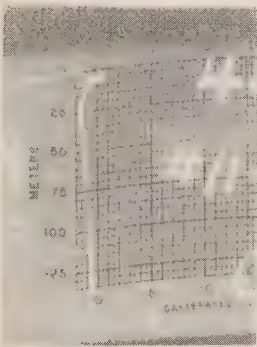
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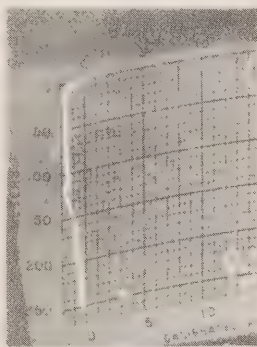
19



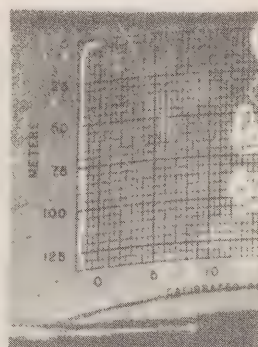
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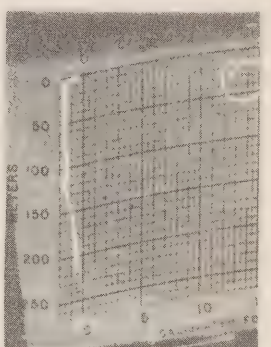
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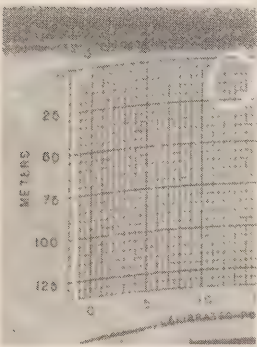
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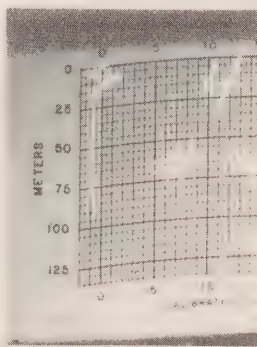
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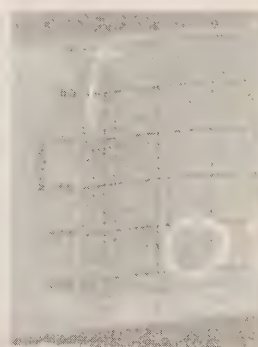
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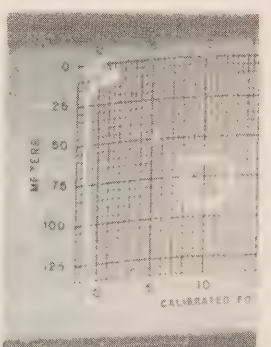
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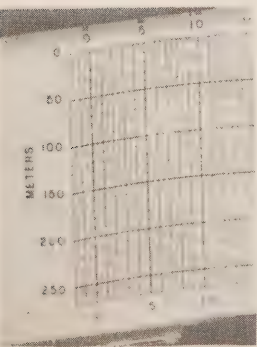
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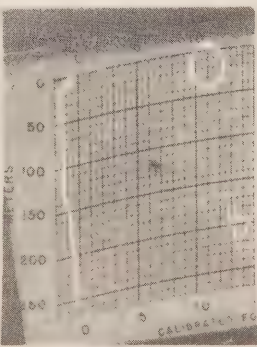
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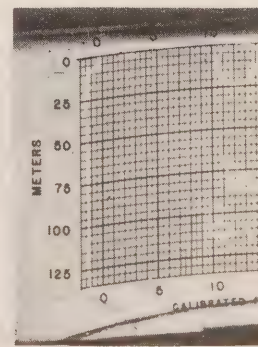
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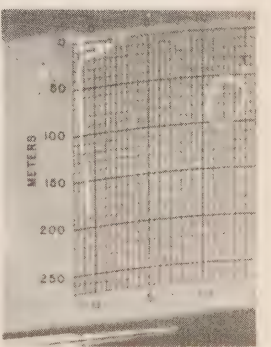
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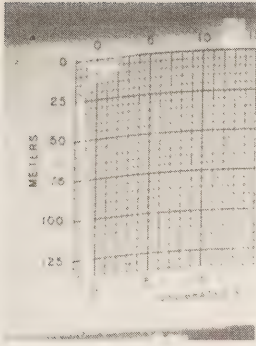
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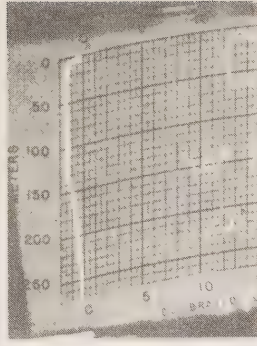
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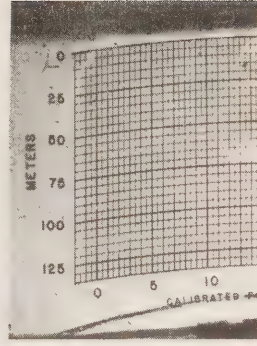
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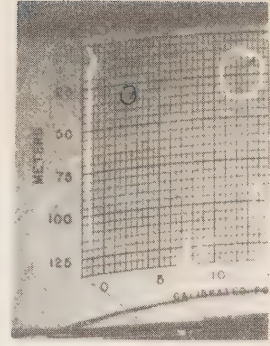
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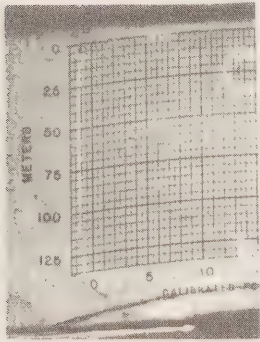
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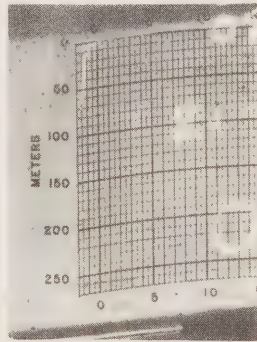
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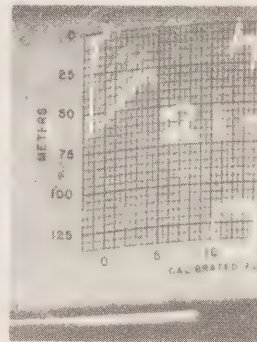
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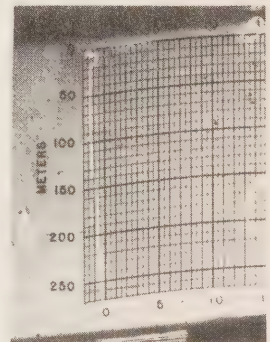
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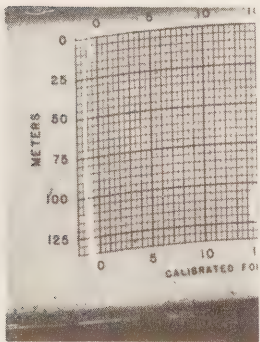
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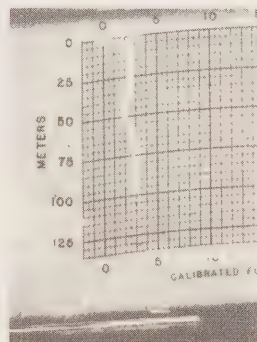
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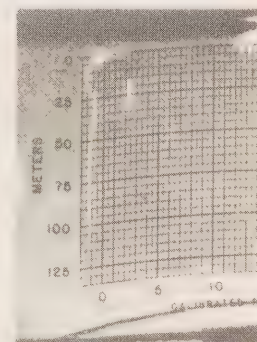
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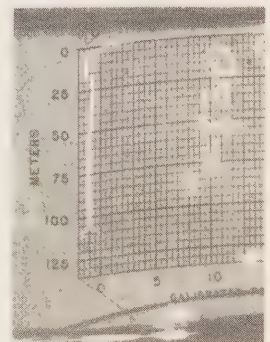
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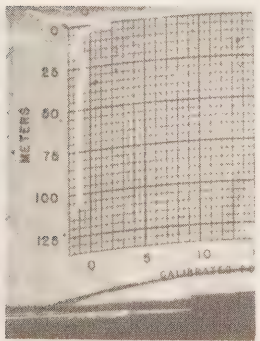
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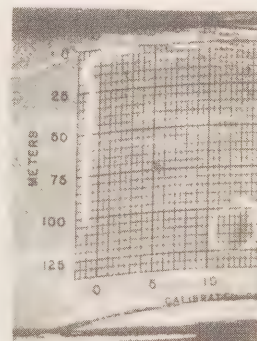
43



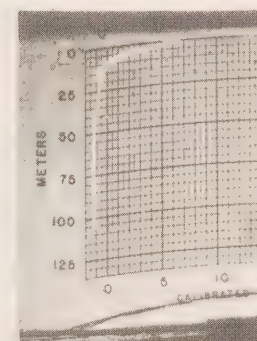
44



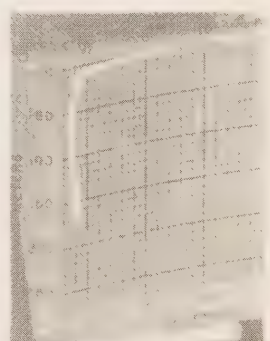
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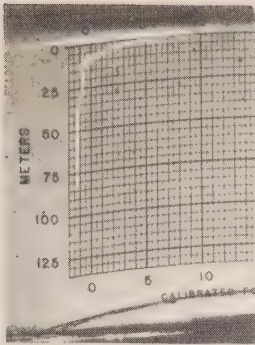
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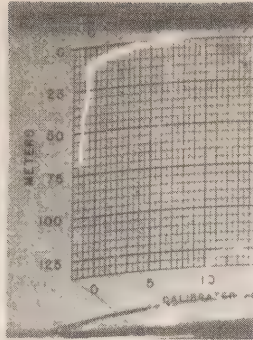
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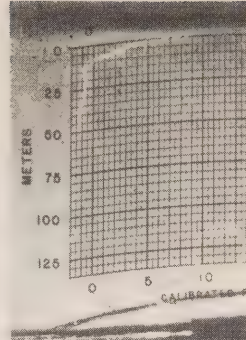
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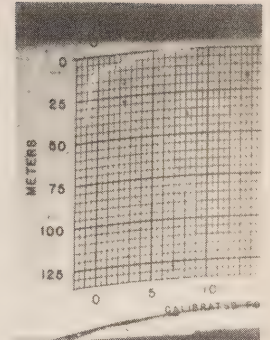
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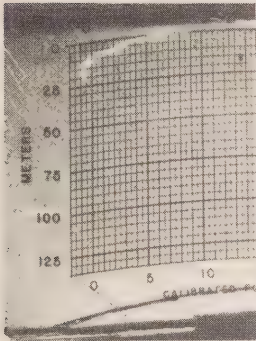
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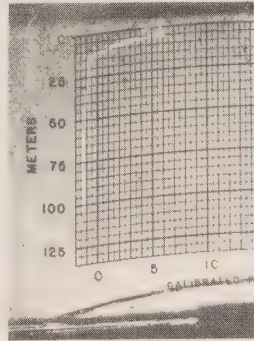
51



52



53



54

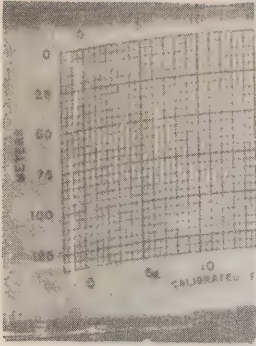


Table 4 A copy of the machine listing of the 1966 bathythermograph data indicating the consecutive slide number, latitude, longitude, day, month, year and the Greenwich Mean Time of the observation.

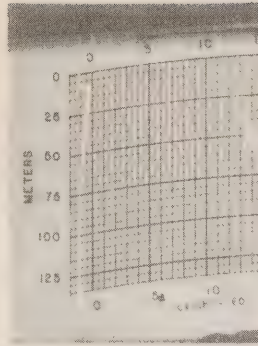
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
001	81	25	076	50	19	05	66	21	51
002	81	25	076	50	23	05	66	21	45
003	81	25	076	50	25	05	66	18	32
004	81	25	076	50	01	06	66	02	04
005	81	25	076	50	07	06	66	20	00
006	81	25	076	50	07	06	66	21	00
007	81	25	076	50	08	06	66	21	00
008	83	09	074	03	11	06	66	16	00
009	82	55	073	35	12	06	66	20	00
010	82	55	073	35	12	06	66	20	30
011	82	55	073	24	13	06	66	15	30
012	82	55	073	24	13	06	66	15	40
013	82	55	073	24	13	06	66	15	50
014	81	25	076	50	14	06	66	17	30
015	82	49	076	41	19	06	66	15	15
016	82	49	076	41	19	06	66	15	30
017	81	23	077	15	19	06	66	22	30
018	81	25	076	50	20	06	66	23	50
019	81	25	076	50	21	06	66	00	10
020	81	25	076	50	21	06	66	19	45
021	81	25	076	50	21	06	66	23	30
022	81	25	076	50	24	06	66	22	30

Table 4 (continued)

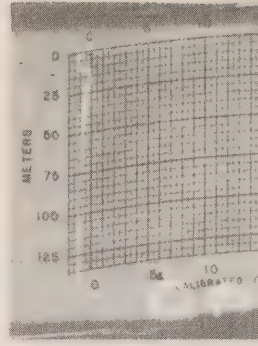
CON No	LAT		LONG		DATE			GMT	
	Deg	Min	Deg	Min	Day	Mon	Yr	Hrs	Min
023	81	25	076	50	26	06	66	22	35
024	81	25	076	50	27	06	66	20	10
025	81	25	076	50	28	06	66	20	05
026	81	25	076	50	28	06	66	23	00
027	81	25	076	50	29	06	66	23	00
028	81	25	076	50	30	06	66	23	10
029	81	25	076	50	01	07	66	22	30
030	81	25	076	50	02	07	66	22	40
031	81	25	076	50	03	07	66	22	35
032	81	25	076	50	04	07	66	22	30
033	81	25	076	50	05	07	66	18	42
034	81	25	076	50	05	07	66	22	30
035	81	25	076	50	06	07	66	22	10
036	81	25	076	50	08	07	66	22	25
037	81	25	076	50	09	07	66	22	30
038	81	25	076	50	11	07	66	22	35
039	81	25	076	50	12	07	66	17	00
040	81	25	076	50	16	07	66	15	53
041	81	25	076	50	18	07	66	15	44
042	81	25	076	50	18	07	66	17	15
043	81	25	076	50	18	07	66	19	00
044	81	25	076	50	18	07	66	19	15
045	81	25	076	50	18	07	66	22	00
046	81	25	076	50	18	07	66	22	15



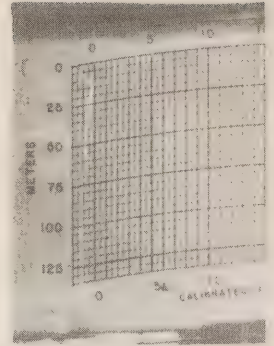
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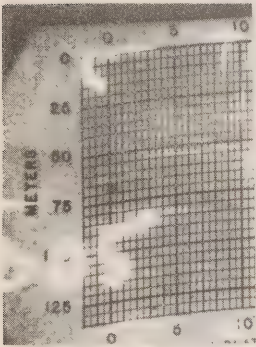
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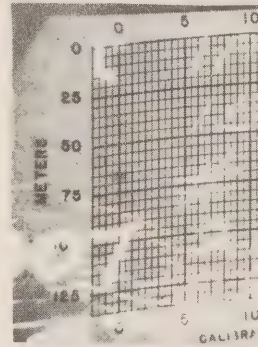
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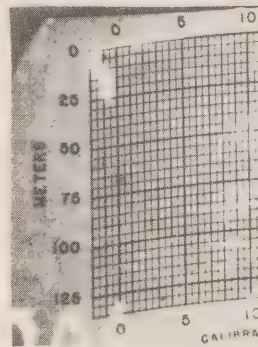
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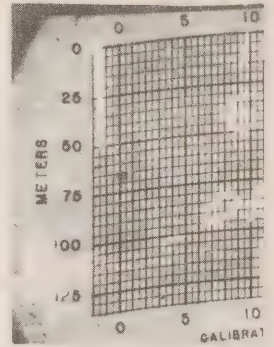
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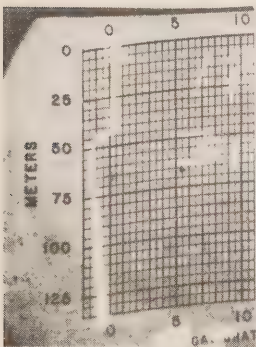
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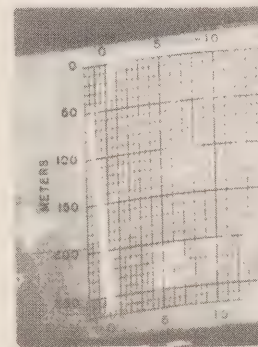
7



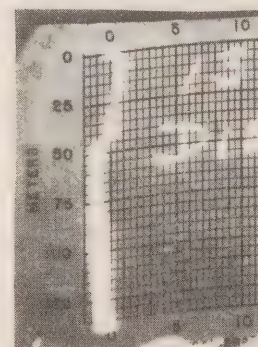
8



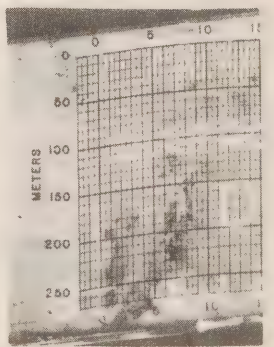
9



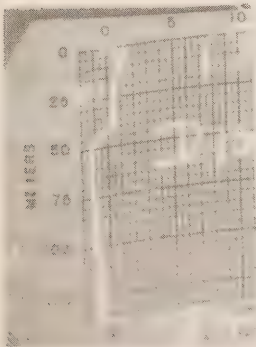
10



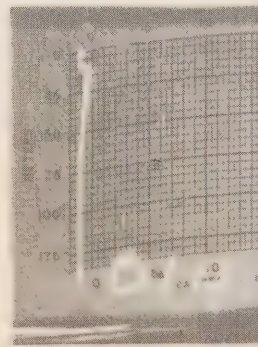
11



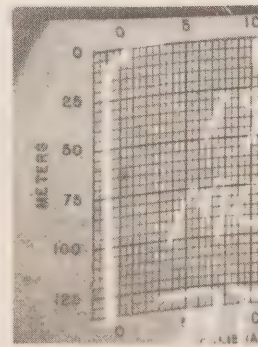
12



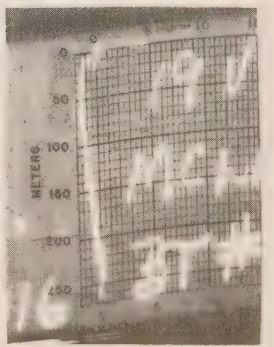
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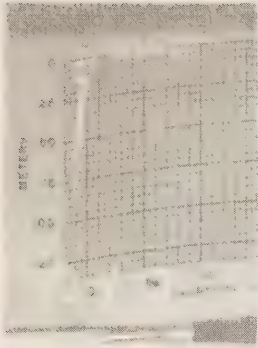
14



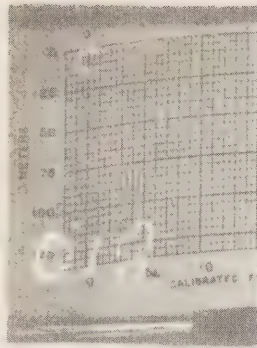
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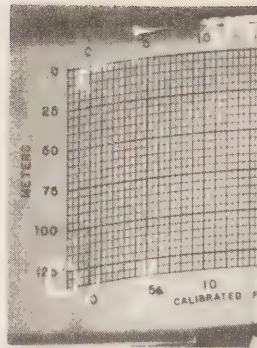
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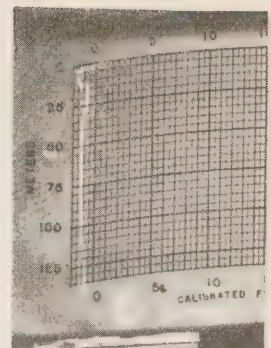
17



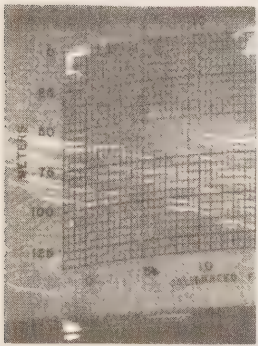
18



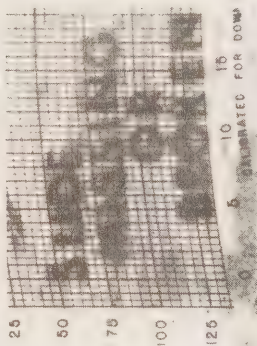
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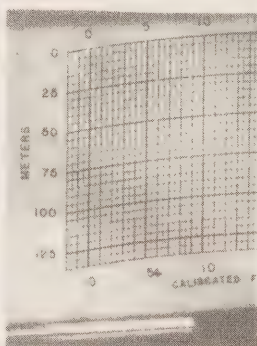
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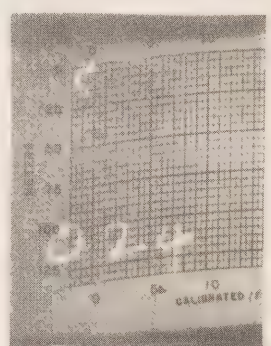
21



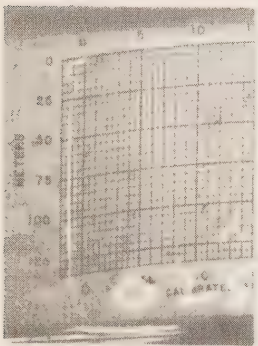
22



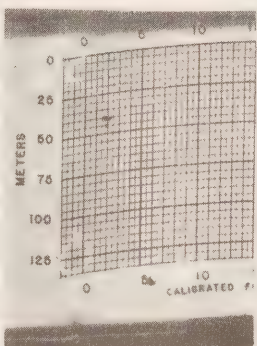
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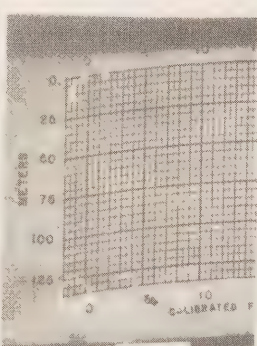
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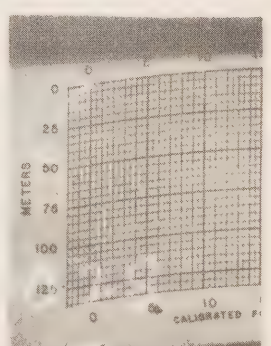
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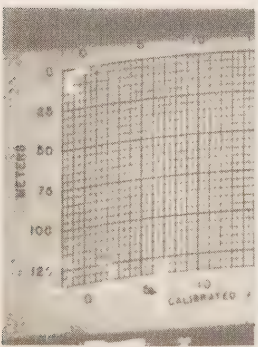
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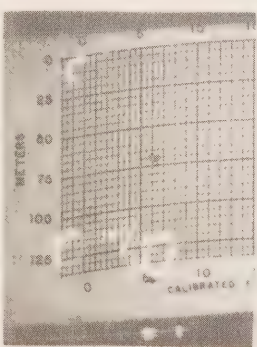
27



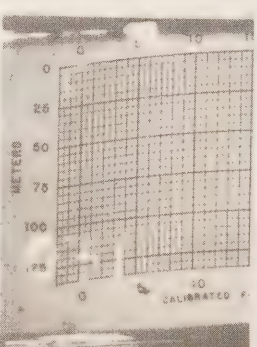
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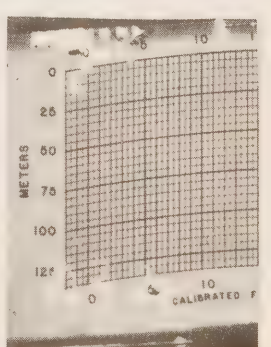
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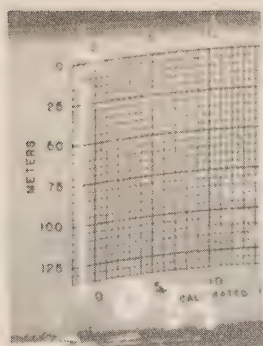
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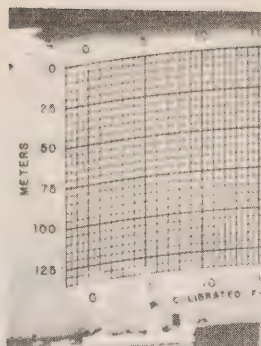
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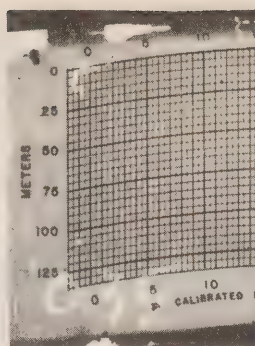
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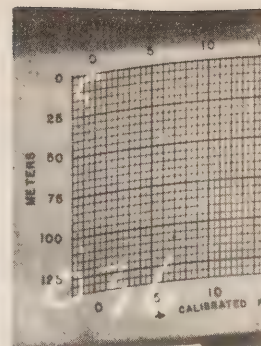
33



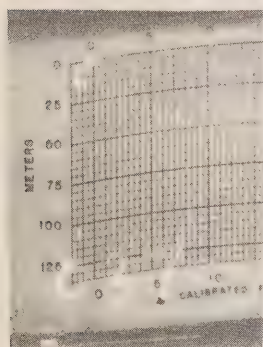
34



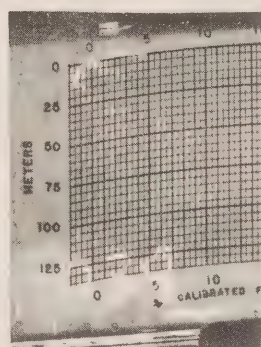
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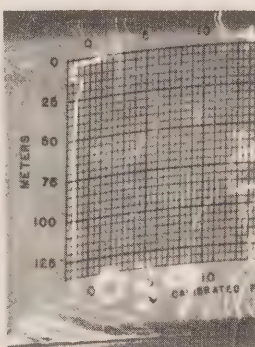
36



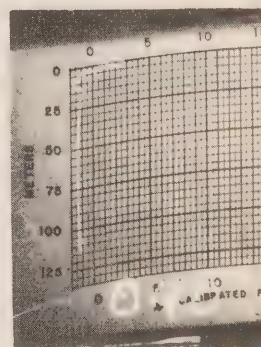
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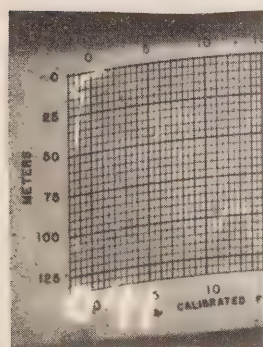
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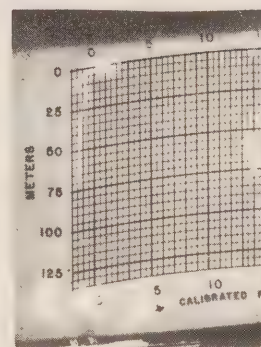
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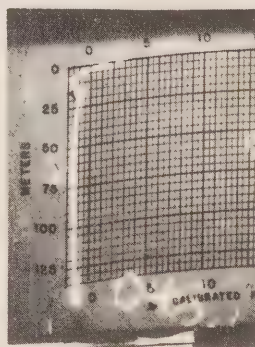
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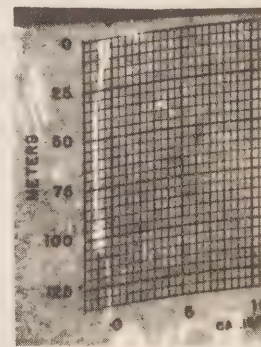
41



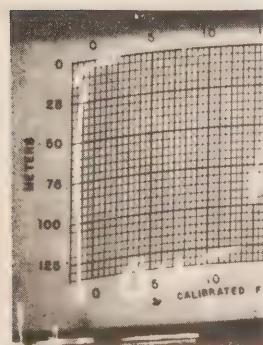
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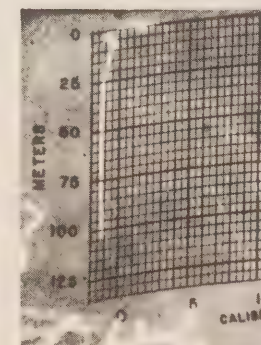
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# REFERENCES

- Barry, R.G. and C.I. Jackson, 1969. Summer weather conditions at Tanquary Fiord, N.W.T., 1963-67. J. Arct. and Alp. Res., 1, (3) p. 169-80.
- Bowman, T.E. and A. Long, 1968. Relict populations of *Drepanopus Bungei* and *Limnocalanus macrurus grimaldii* (Copepoda: Calanoida) from Ellesmere Island, N.W.T. Arctic, 21, (3) p. 172-80.
- Brown, N.L. and B.V. Hamon, 1961. An Inductive Salinometer, Deep-Sea Research, Vol. 8, No. 1, pp. 65-75.
- [Canadian Hydrographic Service], 1969. Canadian tide and current tables. Vol. 4. Arctic and Hudson Bay. Marine Sciences Branch, Department of Energy, Mines and Resources: p. 19.
- Cairns, A.A., 1967. The zooplankton of Tanquary Fiord, Ellesmere Island, with special reference to calanoid copepods. J. Fish. Res. Bd. Can., 24, (3) p. 555-68.
- Ekman, V.W., 1908. Die Zusammendrückbarkeit des Meerwassers nebst einigen Werten für Wasser und Quecksilber. Publ. Circ. Cons. Explor. Mer., No. 43, 47 pp.
- Ford, W.L. and G. Hattersley-Smith, 1965. On the oceanography of the Nansen Sound fiord system. Arctic, 18, (3) p. 158-71.
- Hattersley-Smith, G., 1963. The Ward Hunt Ice Shelf: recent changes of the ice front. J. Glaciol., 4, (34) p. 415-23.
1964. Rapid advance of glacier in northern Ellesmere Island. Nature, 20, (4915) p. 176.
1967. Note on ice shelves off the north coast of Ellesmere Island. Arctic Circular, 17, 1 (1965-66), p. 13-14.
- 1969a. Glacial features of Tanquary Fiord and adjoining areas of northern Ellesmere Island, N.W.T. J. Glaciol., 8 (52) p. 23-50.
- 1969b. Recent observations on the surging Otto Glacier, Ellesmere Island. Can. J. Earth Sci., 6, (4) p.883-89.
- 1969c. Operation "Hazen-Tanquary" 1965-68. Defence Research Board: Report Geophysics Hazen 37, 20 p.
- Hattersley-Smith, G. (Ed.) 1967. Operation Tanquary: preliminary report, 1964. Defence Research Board: Report D Phys R (G) Hazen 25, 50 p.
- Hattersley-Smith, G. and H. Serson, 1964. Stratified water of a glacial lake in northern Ellesmere Island. Arctic, 17, (2) p. 109-10.
1966. Reconnaissance oceanography over

the ice of the Nansen Sound fiord system. Defence Research Board: Report D Phys R (G) Hazen 28, 18 p.

Hattersley-Smith, G. and others, 1964. Operation Tanquary: preliminary report, 1963. Defence Research Board: Report D Phys R (G) Hazen 22, 33 p.

Jackson, C.I., 1969. The summer climate of Tanquary Fiord, N.W.T. Defence Research Board: Report Geophysics Hazen 35 (McGill University: Publication in Meteorology No. 95), 65 p.

Keys, J.E., O.M. Johannessen and A. Long, 1969. The oceanography of Disraeli Fiord, northern Ellesmere Island. Defence Research Board: Report Geophysics Hazen 34, 7 p.

Knudsen, Martin, 1901. Hydrographischen Tabellen. Copenhagen, 63 p.

Langleben, M.P., 1966. On the factors affecting the rate of ablation of sea ice. Can. J. Earth Sci., 3, (4) p. 431-39.

1968a. Albedo measurements of an Arctic ice cover from high towers. J. Glaciol., 7, (50) p. 289-97.

1968b. The heat budget of a melting ice cover. International Association of Scientific Hydrology (General Assembly of Bern 1967): Pub. No. 79, p. 151-59.

Long, A., 1967. Age of trapped sea-water at bottom of Lake Tuborg, Ellesmere Island, N.W.T. Trans. Amer. Geophys. Union, 48, (1) p. 136.

Pounder, E.R. and M.P. Langleben., 1968. Acoustic attenuation in sea ice. International Association of Scientific Hydrology (General Assembly of Bern 1967): Pub. No. 79, p. 161-69.

Rattray, M. Jr., 1962 Interpolation errors and Oceanographic Sampling. Deep Sea Research, vol. 9, p 25-37.

Sauer, C.D. and N.P. Fofonoff. Oceans II, a Computer Program for Processing Oceanographic Data (unpublished).

Wilson, W.D., 1960 Equation for the Speed of Sound in Seawater. Journ. Acoust. Soc., America 32, (10) p. 1357.

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